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ABSTRACT

This revision of the "Basic/Essential Skills Taxonomy" exhibits changes based on use of the original taxonomy in the field. It features more precise definitions of the levels of key words and phrases, the deletion of some science items that ranged above basic skills, the combination of the language arts sections from the original two parts, and slight revisions of the enterprise and mathematics sections. The taxonomy provides three skills lists for each of these knowledge areas: free enterprise, language arts, mathematics, and science. The first list presents the skill expressed as a verb, followed by link A (generic constructs) and then Link B (more precise concepts related to the construct). The second list presents Link A first, followed by Link B, and then the verb. The third list presents Link B first, followed by Link A, and then the verb. These three lists are provided as aids in coding the materials. Each list is presented in alphabetical order to assist in the search for a match. Codes are also provided so that a relational database program can be used in a computer-assisted analysis. Appendixes include subcategories and multiple uses of codes for language arts. A coder's guide presents practical guidelines for persons responsible for assigning numeric codes to curriculum materials. A series of exercises provides practice in coding. The taxonomy provides a means for making comparisons between curriculum materials that are developed from differing educational philosophies. (KC)

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THE BASIC/ESSENTIAL SKILLS TAXONOMY

Second Edition - Revised

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Project developed by Arizona State University
Under contract to Arizona Department of Education

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July, 1990

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Preface

(2nd Edition - Revised)

The Basic/Essential Skills Taxonomy (2nd edition - revised) reflects change and progress in the definition of basic skills since the first edition was written. Although studies into the applicability of the Taxonomy have yielded positive results in a variety of applications, the definition and scope of the basic skills have changed slightly. For example, new conceptual approaches to some academic subject areas have emerged. This is especially true in Science where a clearer definition of academic basic skills has resulted from a science education task force. However, consistent with the strategy used in the first edition, the emphasis continues to be on the inclusion of the basic skills identified by the participating states.

Field applications of the Taxonomy have resulted in more precise definitions of the levels of the key words and phrases. In the original Taxonomy the scope of the Science section ranged beyond the extent of basic academic skills. For example, some items included in the original Science Taxonomy embraced concepts typically included in a higher level chemistry course. These items have been removed in the second edition.

In the second edition, the Language Arts section was combined. In the original edition

sub-areas of Language Arts included Language Concepts, Listening, Reading, Speaking and Writing. Users of the Taxonomy requested having both listings in the Language Arts area. This revised second edition, accordingly, contains a combined Language Arts section in the main body of the text and the five sub-areas in Appendix A.

Free Enterprise and Mathematics sections also have been revised slightly to benefit from the experiences resulting from use of the Taxonomy. As stated in the original edition, "Curriculum developers are on the threshold of being able to more thoroughly apply the tenets of accountability and evaluation because of the order that is emerging in curriculum development." The Taxonomy provides a means for making comparisons between curriculum materials that are developed from differing educational philosophies. This revised edition of the Taxonomy incorporates the experience gained from field studies. It is tighter, clearer and, in general, more sharply focused than the first edition.

Introduction

Excellence in education has become a national priority. As such, the opportunities to provide for the exchange of ideas and to challenge those truisms that have guided our past are greater than at any time in the history of American education. Now is the time for educators to ask questions and to develop new levels of cooperation in the delivery of programs and opportunities for learning. The window of opportunity for focusing on educational concerns is at its zenith.

Much attention has been given to identifying needed reforms in education and to proposals for the improvement of learning. The focus of the varied reports has ranged widely. Among the foci are the organization and delivery of school services, staff roles and responsibilities, resource allocation, expected learnings and challenges to improve the efficiency and effectiveness of the delivery of instruction. The consistent theme throughout these reports is the attention given to standards and requirements for students' progression through the educational system. Standards and requirements indicate under what conditions a student will receive credit for achievement and how the student will become eligible to progress through the system. How these

standards and requirements are used actually determines the success of the system, since they affect credit, opportunity to participate, and graduation. To assure that the standards and opportunities are being applied fairly and with sufficient rigor, two major tenets of program planning must be met. These tenets are accountability and evaluation and are critical to curriculum plans within schools.

Curriculum developers are on the threshold of being able to more thoroughly apply the tenets of accountability and evaluation because of the order that is emerging in curriculum development. Numerous conceptual approaches to curriculum and program development exist, but often these approaches are based on philosophical premises that are in some degree incompatible. These premises render integration into a single unitary approach difficult or impossible and therefore minimize accountability and evaluation. Since no single unitary curriculum position has emerged, it is essential to provide a means of making comparisons between materials developed from the various viewpoints. Then, policy makers can make evaluations and provide accountability procedures that take into account the variety of

philosophical perspectives.

An approach to making these comparisons is through a cross-walk technique using a taxonomy as the vehicle. Most people have heard of or used a taxonomy in one form or another. A taxonomy is helpful in communicating the organization of a field and in understanding the interrelationships between ideas or concepts in a field. A taxonomy is often defined as a method for classifying objects or concepts. Benjamin Bloom developed a taxonomy that he labeled an educational-logical-psychological classification system. He noted that the decision of how to order the words was related to the principles receiving the most emphasis. Consequently, education is mentioned first in his listing. From the work of Bloom, a taxonomy in three domains—cognitive, affective, and psychomotor—was developed. Bloom's taxonomy did not attempt to classify specific knowledge domains but rather provided a means for evaluating curriculum materials across knowledge domains.

The Project

The purpose of this project was to develop a procedure that would enable educators to compare curriculum goals and objectives that were based on a variety of philosophical positions and presented in a variety of formats. *The Taxonomy of Basic/Essential Skills* was developed to make the cross-walk between these diverse materials possible. The Taxonomy is based on Basic/Essential Skills Lists provided by 18 states. In most cases, the Lists had been approved by policy makers at the state level. Skills identified by these policy makers typically are compilations identified by educators, business and industry representatives, and interested community members.

Since this Taxonomy was developed from existing lists, there is no implication that the listing represents a complete and comprehensive taxonomy of each specified field of knowledge. Rather, the skills approved are those suggested and approved by a variety of people from numerous states. To the extent that the cumulative compilation represents the scope of the field, the listing is complete. The completeness of the Taxonomy was assessed by a series of studies using the lists provided by the states involved in the project. These studies indicated that items included

on the individual state lists were included in the Taxonomy at approximately a 90 percent rate.

The skill lists provided by the states represented a variety of competency formats. Competency-based learning is an educational approach that focuses on outcomes. The approach requires that the competencies students are expected to achieve must be clearly delineated. Typically, this delineation is accomplished by specifying an action and a receiver of the action. However, people who write curriculum materials using a competency format often adopt a style of their own. In these cases, comparisons can be very difficult. To minimize this idiosyncrasy, the Taxonomy developed for this project was designed around key words. Consequently, a standardized format, although desirable, is not essential to using *The Taxonomy of Basic/Essential Skills* for analysis purposes.

In a traditional approach to competency-based instruction, the specified competencies typically are grouped under specific objectives. These competencies identify the behaviors students will be able to perform or the attitudes students will exhibit. In *The Taxonomy of Basic/Essential Skills*, each skill is presented with a verb that indicates

the operation or function that the student is expected to be able to perform. However, the nature of the operation or function may vary widely. For example, some lists indicated "KNOWS fractions" while others indicated "COMPUTES fractions." In the Taxonomy, every attempt was made to select overt performance words for the verb.

In several of the academic areas included in this Taxonomy, it was not possible to reach a satisfactory level of agreement among the subject matter specialists regarding the desired operational definition of the verb. Therefore, some of the subject matter areas include the verb UNDERSTANDS as the operation or function. While understanding is a category used in Bloom's taxonomy, it is less satisfactory in a competency-based approach which seeks to clearly identify an operational level of performance. The recipient of the action is represented in one or two additional levels. These levels portray a concept and an additional level of precision regarding the primary concept.

The focus of this project was to concentrate on specific knowledge areas within the generic area of Essential or Basic Skills. Four primary areas were included: Language Arts, Mathematics, Free

Enterprise and Science. The Taxonomy was intended to be used to make comparisons between various formats and different approaches to presenting Essential or Basic Skills. The Taxonomy also can be used as a dynamic tool for focusing discussion during the development of curriculum materials.

Use of the Taxonomy

The Taxonomy developed for this project can be used in curriculum development projects and in analysis projects where comparisons between syllabi are needed. The Taxonomy also is a valuable aid in facilitating dialogue between subject matter experts, policy makers, business and industry representatives and parents or other people assisting in curriculum projects.

The Taxonomy can be used in making comparisons between basic skills curriculum materials that are presented in various formats; e.g., state-approved skills lists and subject matter syllabi. Used in this manner, the Taxonomy can aid in curriculum alignment projects by determining the extent of overlap in courses in a program or a series of courses.

The Taxonomy can be used in curriculum development projects. Used in this manner, the basic skills to be mastered, either prior to taking a course or as outcomes of a course, are identified and agreed upon by the project participants. When used to identify skills to be mastered prior to taking a course, the skills are often referred to as enabling objectives. When used as an outcome measure for the course, the skills are often referred to as expected outcomes or competencies.

Similarly, the Taxonomy can be

used in aligning the curriculum offerings of a program of studies. This provides for the orderly progression through an identified set of skills or objectives involving one or more subject areas of a program of studies. Alignment procedures are helpful in determining the degree of reteaching that is desired or in examining curriculum offerings for duplication of materials presented in various course areas, such as mathematics and science.

The Taxonomy can also be useful in focusing dialogue regarding skills to be taught or in evaluating the level of mastery of the materials taught in a subject area.

Communication regarding the desired outcomes of education is imperative as local educational associations attempt to examine the ways for assuring that the desired outcomes of education are clearly understood by all parties involved in education so that duplication of effort can be minimized. Educators can use the Taxonomy to assist in communicating with each other regarding the most efficient ways for delivering the educational services desired by the consumers of their services.

Additionally, as schools move toward criterion-referenced testing, the Taxonomy can be used to identify the skills targeted for

examination. Criterion-referenced testing demands that the knowledge segments that the students are expected to learn are specified. The Taxonomy provides a vehicle for specifying these segments of knowledge.

The arrangement of the parameters of the Taxonomy provides clues to its effective use. Three lists are provided for each knowledge area. The first list presents the Verb followed by Link A and then Link B. The second list presents Link A first, followed by Link B and then the Verb. The third list presents Link B first, followed by Link A and then the Verb. These three lists are provided as aids in coding the materials. It is suggested that when the Taxonomy is being used to analyze curriculum materials, either the Verb list or the Link A list be searched for a match with the curriculum materials being analyzed. In Mathematics, experience indicates that the Verb list is often easiest to use, but in the other subject areas, the initial search is typically best approached by examining the Link A list. In some instances, such as the subject area of Free Enterprise, the Link B list is the preferred entry point. This is true because the Free Enterprise Taxonomy is primarily definitional in nature. That is, the verbs used most often are DEFINES

or DESCRIBES/EXPLAINS. The Link A list provides the construct, e.g., Economic terms, and the Link B list provides the concepts included under the construct, e. g., Investment. Each list is presented in alphabetical order to assist in the search for a match.

Codes are also provided so that a relational database program can be used in a computer assisted analysis. It is suggested that the database be programmed to have key words appear when numeric codes are entered. This makes verification much easier.

It is recommended that a subject matter expert be included on the coding team. While expertise in the knowledge domain is not necessary, having a subject matter expert included on the coding team expedites the coding of the curriculum materials.

The Participants

Numerous people contributed to the success of this project. Barbara Border of the Arizona Department of Public Instruction, Division of Vocational Education, provided the initial impetus. Her knowledge of schooling practices and policy considerations provided critical insights into the issues of education. Richard Condit, Arizona Department of Education, Division of Vocational Education, also provided guidance in developing procedures for working with the Arizona schools in the pilot testing of the materials. His encouragement and objective appraisals were extremely helpful.

The Arizona Department of Education, through the Division of Vocational Education, initially analyzed the Essential Skills (Basic Skills) identified in four occupational areas. The occupational areas were: Horticulture, Secretary, Receptionist, and Marketing. The initial project had two major purposes. First, the Vocational Education Committee of the State Board of Education wanted to assess whether the Essential Skills taught by vocational educators were the same as or similar to the Essential Skills approved by and expected to be taught in the general academic curriculum in Arizona high schools. The Essential Skills examined in the assessment included: Mathematics, Language Arts, Free Enterprise, and Science.

Second, as part of its commitment to V-TECS, a national consortium in Vocational Education, Arizona agreed to develop a procedure for making comparisons between written curriculum materials using various formats, and reflecting varying orientations toward Essential (Basic) Skills and competency-based education. In attempting to make comparisons between materials that used multiple formats and philosophies, it was essential that a common vehicle be developed for making a cross-walk between the evaluations. Numerous systems for making comparisons and evaluations of narrative material were examined but none were judged to be satisfactory, mainly because the structure and language used in the skills lists were inconsistent. At one point it appeared that a modified technique for journal analysis would be useful but this approach proved to be too complex and required too many discriminations to be made by the raters. A uniform set of specifications was needed so that comparisons could be made. It became apparent that a classification similar to that often used in developing instructional objectives was needed. A preliminary Taxonomy was developed.

To assure that the skills included in the Taxonomy were applicable to

the states involved in the V-TECS Consortium, the Board of V-TECS, under the guidance of Ron McGage, decided to include any of the states in the Consortium who elected to participate in the development of a broader based taxonomy. This group included all the V-TECS participating states who recently had approved Basic Skills or Essential Skills lists. The states participating in the development of the Taxonomy reported in this document included: Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Illinois, Kentucky, Michigan, Mississippi, New York, North Carolina, Oregon, South Carolina, Tennessee, Utah, Virginia, and Washington.

A critical consideration in the development of the Taxonomy was the desire to gain sufficient information so that the Taxonomy was comprehensive but was not so voluminous that the Taxonomy would be of limited practical value. Ideas from subject matter specialists, validated listings from business and industry people, and resource material from a variety of sources such as textbooks, standardized tests, and other available curriculum materials were used in the construction of *The Taxonomy of Basic/Essential Skills*.

Charles Losh, Arizona
Department of Education, Division of

Vocational Education, has toiled extensively in developing curriculum materials in a variety of settings. He was especially helpful in completing this project. His keen insights into translating policy and procedures from numerous sources, his kind and careful consideration of others, and his patience during the frustrating moments of the project are greatly appreciated.

The states who participated in this project are all members of V-TECS. Through Executive Director Ron McGage, participation in the project by the states was encouraged. His thoughtful and systematic approach to curriculum development was tremendously beneficial in completing this project.

Finally, the V-TECS states who cooperated throughout the project were: Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Virginia, and Washington. Their assistance was greatly valued and the successful use of the Taxonomy relies on their continuing commitment to improve the delivery of educational services.

The Taxonomy



Free Enterprise

Free Enterprise



Code	Verb	Link A	Link B
001	Compares	Economic systems	Communism/socialism
002			Free enterprise/mixed
003	Defines	Economic indicators	...
004			Consumer Price Index
005			GNP
006		Economic terms	...
007			Assets
008			Bonds
009			Budget
010			Capital
011			Capitalism
012			Collateral
013			Competition
014			Consumer
015			Cost
016			Credit
017			Currency
018			Depreciation
019			Distribution
020			Economic terms
021			Economics
022			Entrepreneur
023			Equity
024			Exchange rate
025			Expenses
026			Goods
027			Import/export
028			Income
029			Inflation/deflation
030			Investments
031			Labor
032			Land
033			Lease
034			Liability
035			Loans
036			Margin
037			Market
038			Merchandise
039			Monopoly
040			Obsolescence
041			Price
042			Producer
043			Productivity
044			Profit
045			Profit motive
046			Property

Free Enterprise

Code	Verb	Link A	Link B
047			Proprietor
048			Recession/depression
049			Resources
050			Retail
051			Retained earnings
052			Savings
053			Services
054			Stocks/securities
055			Trade
056			Trade barriers
057			Trade—international
058			Unemployment rate
059			Wholesale
060			Work force
061	Describes/Explains	Business cycles	...
062			Economic growth
063		Credit responsibilities	...
064		Division of labor	...
065		Economic concepts	...
066			Balance of payments
067			Free market
068			Full employment
069			Marketing
070			Opportunity costs
071			Scarcity
072			Supply/demand
073			Trade deficit
074		Economic interdependence	...
075			Natural resources
076		Federal Reserve	...
077			Money supply
078		Financing	...
079			Cash
080			Credit
081			Credit—commercial
082			Credit—consumer
083			Installment buying
084		Foreign trade	...
085			Consumer/worker impact
086			Foreign affairs
087		Government impact/costs	...
088			Interest rates
089			Laws
090			Money supply
091			Quotas
092			Regulations



Free Enterprise

Code	Verb	Link A	Link B
093			Spending
094			Subsidies
095			Tariffs
096			Taxes
097			Working conditions
098			Zoning
099		Insurance types	...
100			Benefits
101			Costs
102			Purposes
103		Investment risks/types	...
104			Bonds
105			Gold
106			Land
107			Savings accounts/money market
108			Stocks
109		Labor relations	...
110		Merchandising	...
111		Money role	...
112		Money supply	...
113			Effect on interest/prices
114		Needs/wants	...
115			Goods/services
116		Taxation	...
117			Function
118	Identifies	Cost factors	...
119			Advertising
120			Capital resources
121			Fringe benefits
122			Human resources
123			Natural resources
124			Pricing
125			Wages
126		Job opportunities	...
127			Emerging fields
128	Prepares	Personal budget	...
129			Needs/income/wants

Language Arts

Language Arts



Code	Verb	Link A	Link B
001	Adapts	Diction/structure	...
002			Audience
003		Strategy	Purpose
004			Situation
005			Listening
006			Reading
007			Speaking
008			Writing
009		Style	...
010			Audience
011	Cultural differences		
012	Applies/Uses	Purpose	
013		Definitions	
014		...	
015		Figures of speech	
016		...	
017		Hyperbole	
018		Idiomatic expressions	
019		Metaphor	
020		Personification	
021		Simile	
022	Study habits/methods	...	
023		Previewing	
024		Prior knowledge	
025		Skimming	
026		Test-taking	
027	Appreciates	Author's style/approach	...
028			Characters
029			Imagery
030			Incidents/details
031			Language usage
032			Mood/tone
033			Organization/structure
034			Plot
035			Sequence
036			Setting
037	Attends	Directions/task	
038		Nonverbal cues	
039		Verbal cues	
040	Collects/Organizes	Information—oral/written	...
041			Classifications
042			Discussions
043			Library resources
044			Notes
045			Observations
046			Outlines
			Personal experiences
			Reading

Language Arts

Code	Verb	Link A	Link B
047			Research—formal
048	Composes/Edits	Agenda	...
049		Audio-visual aids	...
050			Graphs
051		Bibliographies	...
052		Drafts—oral/written	...
053			Consistency
054			Extemporaneous
055			Originality
056			Sequence
057			Tone
058		Forms/documents	...
059			Classified ads
060			College applications
061			Financial applications
062			Job applications
063			Resumes
064			Social Security applications
065			W-4 forms
066			Work permits
067		Journals/diaries	...
068			Personal recollections
069		Notes	...
070			Lecture
071		Oral presentations	...
072			Structure
073		Outlines	...
074		Paragraphs	...
075			Cause/effect relationships
076			Coherence
077			Details
078			Sequence
079			Topic sentences/main idea
080			Transitions
081			...
082			Form
083			Imagery
084			Rhyme
085			Rhythm
086			Tone
087		Reports/essays	...
088			Editorials/opinions
089			Evaluations/critiques
090			Expositions
091			Information requests
092			Information supplying

Language Arts

Code	Verb	Link A	Link B
093			Narratives
094			Persuasive text
095			Proofs/revisions
096			Research—formal
097			Short stories/plays
098			Summaries
099		Sentences	...
100			Adjectives
101			Adverbs
102			Capitalization
103			Completeness
104			Direct/indirect object
105			Fragments—w/o
106			Irregular expressions—w/o
107			Modifiers
108			Nouns
109			Order of words
110			Predicates
111			Pronouns
112			Punctuation
113			Run-on—w/o
114			Spelling
115			Subject/verb agreement
116			Subjects
117			Verbs
118		Social communications/letters	...
119			Business
120			Personal
121	Comprehends	Information—oral	...
122			Assumptions/biases
123			Cause/effect relationships
124			Character traits
125			Comparisons/contrasts
126			Conclusions
127			Context
128			Main idea
129			Purpose
130			Rationale
131			Varied types
132		Information—written	...
133			Assumptions/biases
134			Cause/effect relationships
135			Character traits
136			Charts/tables/graphs
137			Comparisons/contrasts
138			Conclusions



Language Arts

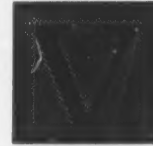
Code	Verb	Link A	Link B
139			Context
140			Evaluations/critiques
141			Main idea
142			Mood
143			Persuasive text
144			Plot
145			Purpose
146			Rationale
147			Sequence
148			Setting
149			Summaries
150	Describes/Explains	Grammar system	...
151			Usage
152		Language	...
153			Families
154			Origin/development
155		Language situations	...
156			Audience
157			Purpose
158		New words	Origin/development
159		Perceptual effects	...
160			Assumptions/biases
161			Emotional tone
162			Euphemisms
163			Irony/satire
164			Propaganda techniques
165			Stereotypes
166		Purpose/strategy	Word groups
167	Evaluates	Information—oral	...
168			Adequacy/sufficiency
169			Appropriateness
170			Clarity
171			Conclusions/solutions
172			Fact/opinion
173			Non-print media
174			Propaganda techniques
175			Reality/fantasy
176			Relationship of ideas
177			Relevant/irrelevant
178			Sources
179			Validity
180		Information—written	...
181			Adequacy/sufficiency
182			Appropriateness
183			Clarity
184			Conclusions/solutions

Language Arts

Code	Verb	Link A	Link B
185			Fact/opinion
186			Propaganda techniques
187			Reality/fantasy
188			Relationship of ideas
189			Relevant/irrelevant
190			Sources
191			Validity
192	Identifies	Function of words	...
193			Adjectives/adverbs
194			Direct/indirect object
195			Nouns/verbs
196			Phrases/clauses
197			Prepositions/conjunctions
198			Subject/predicate
199		Information—oral	...
200			Assumptions/biases
201			Context
202			Dialects
203			Emotional tone
204			Euphemisms
205			Explicit/implicit
206			Irony/satire
207			Key words/phrases
208			Main idea
209			Mood/tone
210			Outcomes/solutions
211			Prior knowledge
212			Propaganda techniques
213			Stereotypes
214		Information—written	...
215			Abbreviations
216			Assumptions/biases
217			Context
218			Dialects
219			Emotional tone
220			Euphemisms
221			Explicit/implicit
222			Fiction/non-fiction
223			Irony/satire
224			Key words/phrases
225			Main idea
226			Mood/tone
227			Outcomes/solutions
228			Propaganda techniques
229			Stereotypes
230		Point of view	First/third person

Language Arts

Code	Verb	Link A	Link B
231		Purpose/strategy	...
232			Listening
233			Reading
234			Speaking
235			Writing
236	Infers/Predicts	Information—oral	...
237			Assumptions/biases
238			Cause/effect relationships
239			Character traits
240			Comparisons/contrasts
241			Context
242			Details
243			Main idea
244			Outcomes/solutions
245			Purpose
246			Rationale
247		Information—written	...
248			Assumptions/biases
249			Cause/effect relationships
250			Character traits
251			Comparisons/contrasts
252			Context
253			Details
254			Main idea
255			Mood/tone
256			Outcomes/solutions
257			Plot/setting
258			Purpose
259			Rationale
260			Sequence
261	Presents	Formal speech	...
262			Expository
263			Persuasive
264		Informal speech	...
265			Discussion
266			Information requests
267			Information supplying
268			Interpretation
269			Interview
270			Persuasive
271	Uses	Dictionary	...
272		Library resources	...
273			Almanacs/yearbooks
274			Atlases
275			Card catalogs
276			Encyclopedia



Language Arts

Code	Verb	Link A	Link B
277			Guides
278		Text resources	...
279			Glossaries
280			Indexes
281			Table of contents
282		Thesaurus	...

Mathematics

Mathematics



Code	Verb	Link A	Link B
001	Calculates/Evaluates	Algebraic expressions	...
002		Common factors	...
003		Congruent	Triangles
004		Factors	Whole numbers/divisibility
005		Geometric figures	Area
006			Circumference
007			Perimeter
008			Surface area
009			Volume
010		Least/common denominators	...
011		Least/common multiples	...
012		Linear relationship	Ordered pairs
013		Mean/median/mode	...
014		Measurement	Precision
015		Percent	In/decrease, markup/discount
016		Prime factors	...
017		Prime numbers	...
018		Reasoning	Invalid arguments
019		Statistics	...
020	Computes	Unit measure	Test of hypotheses
021		Addition	Price
022			Algebraic fractions
023			Binomials
024			Complex fractions
025			Complex numbers
026			Decimals
027			Fractions
028			Mentally
029			Mixed numbers
030			Monomials
031			Polynomials
032			Radicals
033			Rational expressions
034			Whole numbers
035		Division	Algebraic fractions
036			Binomials
037			Complex fractions
038			Complex numbers
039			Decimals
040			Fractions
041			Mentally
042			Mixed numbers
043			Monomials
044			Polynomials
045			Radicals
046			Rational expressions

Mathematics

Code	Verb	Link A	Link B
047			Whole numbers
048		Equation of line	...
049		Equations	...
050			Absolute value
051		Exact values	Trigonometric function
052		Expected values	...
053			Formula
054			Probabilities/decimals/fractions/percents
055			Two or more unrelated events
056		Factoring	...
057			Polynomials
058			Quadratic equations
059		Inequalities	...
060			Absolute value
061		Multiplication	Algebraic fractions
062			Binomials
063			Complex fractions
064			Complex numbers
065			Decimals
066			Fractions
067			Mentally
068			Mixed numbers
069			Monomials
070			Polynomials
071			Radicals
072			Rational expressions
073			Whole numbers
074		Polynomial functions	...
075			Table of values
076		Rational expressions	...
077		Slope of line	Intercept form
078		Square	Vertex
079		Square root	...
080		Subtraction	Algebraic fractions
081			Binomials
082			Complex fractions
083			Complex numbers
084			Decimals
085			Fractions
086			Mentally
087			Mixed numbers
088			Monomials
089			Polynomials
090			Radicals
091			Rational expressions
092			Whole numbers

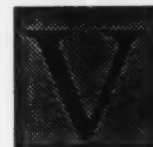
Mathematics

Code	Verb	Link A	Link B
093	Constructs	Synthetic division	Polynomials
094		Angles	...
095			Angle bisectors
096			Congruent angles
097		Charts/tables/graphs	...
098			Data points
099		Frequency tables	...
100		Geometric figures	...
101			Compass/straight edge
102			Three dimensional figures
103			Transformation
104		Graphs	...
105			Cumulative frequency/computer
106		Graphs of function	...
107	Converts		Absolute functions
108			Inverse functions
109			Linear functions
110			Quadratic functions
111			Trigonometric functions
112		Lines	...
113			Congruent segments
114			Parallel/perpendicular
115		Angles	Degree/radian measurement
116		Decimals/fractions/ratios/percents	...
117		Formula	Equivalent form
118		Fractions	...
119			Mixed numbers
120			Reciprocal form
121			Simplest form
122	Distinguishes	Radical form	Fractional exponents
123		Square units	...
124		Units	...
125			Conversion rule
126			Metric/English—meters/feet, e.g.
127		Word problems	Mathematical expressions
128		Angles/circles/arcs	...
129		Congruence/similarity	Geometric figures
130		Deductive/inductive reasoning	...
131		Equal/not equal	...
132		Estimate/exact value	...
133		Proportion/congruence	...
134		Scientific/standard notation	...
135		Symmetry/transformation	...
136	Estimates/Rounds	Angles	...
137		Empirical probabilities	...
138			Population parameters



Mathematics

Code	Verb	Link A	Link B
139		Expected outcomes	...
140			Everyday occurrences
141		Geometric figures	Area
142			Circumference
143			Perimeter
144			Volume
145			Weight
146		Numbers	Add/subtract/divide/multiply
147		Random outcomes	Mathematical expectation
148		Reasonable answers	...
149			Equations
150			Successive approximations
151		Square roots	...
152		Values not given	Equation
153	Formulates/Verifies	Angles	...
154			Acute/obtuse/right
155			Complementary
156			Supplementary
157		Arguments	Valid/invalid
158		Conclusions	...
159		Questions	...
160		Trigonometric identities	...
161	Identifies	English measures	Length/volume/weight
162		Fractions	Parts
163		Function notations	...
164		Geometric figures	...
165			Circles/angles/arcs/polygons
166		Graphs of function	...
167		Lines	...
168			Parallel/perpendicular
169			Ray/segment
170			Vertical/horizontal
171		Metric measures	Length/volume/weight
172		Missing/irrelevant data	Word problems
173		Statistics	Applications
174	Interprets	Charts/tables/graphs	...
175			Functions
176		Symbols	<, >, =, e.g.
177		System of numbers	Place value
178			Rational numbers, e.g., fractions
179	Measures	Direct	...
180			Angles
181			Distance
182			Temperature
183			Time
184			Volume



Mathematics

Code	Verb	Link A	Link B
185			Weight
186		Indirect	...
187			Formulas
188		Metric	...
189			Area
190			Distance
191			Temperature
192			Volume
193			Weight
194	Orders	Rational numbers	...
195			Number line
196	Solves equations	Exponential	...
197			Analytic
198			Graphic
199		Linear	...
200			Analytic
201			Graphic
202		Logarithmic	...
203		Quadratic	...
204			Quadratic formula
205		Systems of	...
206			Analytic
207			Graphic
208			Substitution
209		Trigonometric	...
210			Analytic
211			Graphic
212	Solves inequalities	Exponential	...
213		Linear	...
214			Analytic
215			Graphic
216		Quadratic	...
217			Quadratic formula
218		Systems of	...
219			Analytic
220			Graphic
221	Solves problems	Absolute value	...
222		Coordinate geometry	...
223			Conic sections
224			Distance formula
225			Equation of a line
226		Formulas	Specified symbols
227		Fractions/decimals/ratios/percents	...
228			Direct/indirect variation
229		Generate conclusions	Deductive reasoning
230		Proportion	...



Mathematics

Code	Verb	Link A	Link B
231			Area
232			Volume
233			Weight
234		Rational expressions	...
235		Right triangles	...
236			Cosines/sines/tangents
237			Pythagorean theorem
238		Trial and error	...
239	Understands	Conditionals	...
240		Definitions	...
241			Conditions
242			Standards
243		Function concept	...
244		Geometric figures	Visual perception
245		Line/angle	Relationships
246		Linear systems	Solutions
247		Number theory	Arithmetic progression
248			Counting arrangements
249			Effect of extremes/mean
250			Effect of extremes/median
251			Effects of extremes/range
252			Geometric progression
253			Sequential outcomes
254		Order of operations	Rules
255		Power/exponent	...
256		Statistics	...
257			Error of measure
258			Probability
259			Sampling
260		System of mathematics	Rational number system
261	Uses calculator	Addition	...
262		Division	...
263		Exponential functions	...
264		Formulas	...
265		Logarithmic functions	...
266		Multiplication	...
267		Radical numbers	...
268		Subtraction	...
269		Trigonometric functions	Cosines/sines/tangents

Science

Science



Code	Verb	Link A	Link B
001	Analyzes/Evaluates	Chemicals in society	...
002			Drugs
003			Fertilizers
004			Food additives
005			MSG
006			Vitamins
007		Environmental issues	...
008			Ecology
009			Impact statements
010			Media information
011			Pollution
012			Waste management
013		Experiments	...
014			Conclusions
015			Conflicting data
016			Controls
017			Data
018			Inferences
019			Limitations
020			Operational definitions
021			Questions
022			Replications
023			Samples
024			Sources of errors
025			Variables
026		Natural resources	...
027			Allocation
028			Recovery
029			Renewable/nonrenewable
030		Science technology	Utilization
031			...
032			Implications—economic
033			Implications—political
034			Implications—social
035			Products, e.g., petroleum/textiles
036			Societal influences
037	Applies/Uses	Classification schemes	...
038			Kingdom, phylum, etc.
039		Laboratory instruments	...
040		Laboratory techniques	...
041		Maps/charts/tables/graphs	Safety
042			...
043			...
044		Models/theories/laws	...
045			Analysis—qualitative/quantitative
046			Data gathering

Science

Code	Verb	Link A	Link B
047			Observation—direct/indirect
048			Predictions
049			Problem identification
050		Scientific notation	...
051	Classifies	Matter	...
052	Converts	Measurement units	...
053	Describes/Explains	Acids/bases	...
054			Acid indicators
055			Base indicators
056			Ions
057			Neutralization/salts
058			pH
059		Atoms	...
060			Bonding
061			Chemical equations
062			Chemical formulas
063			Composition, e.g., electrons, protons, neutrons
064			Mass
065			Number
066			Structure
067			Weight
068		Bacteria	...
069			Benefits
070			Characteristics
071			Protein production
072			Resistance to drugs
073		Biochemistry	...
074			ATP/ADP
075			Body heat
076			Cell respiration
077			Cellulose
078			Chlorophyll
079			Fermentation
080			Food energy pyramid
081			Phosphate groups
082			Photosynthesis
083			Protein synthesis
084			Simple sugar
085		Carbon/organic chemistry	...
086			Alkane series
087			Alkene series
088			Alkyne series
089			Amino acids
090			Carbohydrates
091			Compounds
092			Cyclic hydrocarbons

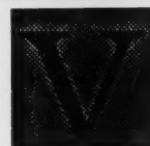


Science

Code Verb	Link A	Link B
093		Fats
094		Glucose
095		Hydrocarbons—derivatives
096		Hydrocarbons—saturated/unsaturated
097		Isomers
098		Lipids
099		Polyatomic ion
100		Proteins
101		Tetrahedron
102		Vitamins
103	Cells	...
104		Diffusion
105		Division
106		Eukaryotes
107		Homeostasis
108		Osmosis
109		Parts/functions
110		Photosynthesis/ATP
111		Prokaryotes
112		Respiration
113		Transport—active/passive
114	Chemical reactions	...
115		Activation energy
116		Catalysts
117		Concentration
118		Endothermic
119		Energy changes
120		Exothermic
121		Inhibitors
122		Mole
123		Reactants
124	Color	...
125		Blindness
126		Cones
127		Pigmentation
128		Rainbow
129		Rods
130		Spectrum
131	Conservation	...
132		Energy
133		Matter
134		Minerals
135		Soil
136		Water
137		Wildlife
138	Earth	...

Science

Code Verb	Link A	Link B
139		Climate
140		Closed system
141		Composition/structure
142		Crust
143		Erosion/weathering
144		Gravity
145		Latitude—temperature zones
146		Longitude—time zones
147		Mineral cycle
148		Movement, e.g., earthquakes
149		Natural resources
150		Rock cycles
151		Shape
152		Water
153	Earth history	...
154		Age/composition
155		Dating
156		Eras
157		Fossils/rocks
158		Superposition
159	Ecology	...
160		Biomes
161		Community
162		Consumers/producers
163		Decomposers
164		Ecosystem
165		Entropy
166		Food chain
167		Food webs
168		Fossil fuels
169		Habitats
170		Herbivores/omnivores/carnivores
171		Niches
172		Population
173		Predators
174		Succession
175		Survival mechanisms
176	Ecosystems	...
177	Electricity	...
178		Batteries
179		Charging
180		Conductors/insulators
181		Coulomb's law
182		Currents—direct/alternating
183		Friction
184		Ground



Science

Code Verb	Link A	Link B
185		Lightning
186		Parallel/series circuits
187		Short circuit
188		Static
189		Transistor
190		Vacuum tube
191	Electricity—generating	...
192		Hydroelectric
193		Incandescent
194		Motors
195		Solar
196		Steam, e.g., nuclear
197		Transformers
198	Electricity—measurement	...
199		Ammeter/voltmeter
200		Ampere
201		Fuse
202		Galvanometer
203		Ohm's law
204		Resistance
205	Electrochemical energy	Voltage
206		...
207		Anode
208		Cathode
209		Electrolysis
210		Types—cells, batteries, electrodes
211	Electrochemical reactions	...
212		Activity of metals
213	Electromagnetism	Oxidation/reduction
214		...
215		Coil
216		Earth
217		Magnetic fields/force
218		Magnetic poles
219		Magnets
220	Electrons	...
221		Chemical bonding
222		Covalent bonding
223		Electric charges
224		Ionic bonds
225		Magnets
226	Elements/compounds	...
227		Atomic number/weight
228		Bonding
229		Catalysts
230		Combustion



Science

Code Verb	Link A	Link B
231	Energy	...
232		Conversion
233		Kinetic/potential
234		Law of conservation
235		Mechanical
236		Momentum
237		Power
238		Theory of relativity
239		Thermal
240		...
241	Energy/resources	Fossils
242		Gases
243		Geothermal
244		Nuclear
245		Solar
246		Water/tides
247		Wind
248	Force	...
249		Balanced/unbalanced
250		Centrifugal/centripetal
251		Friction
252		Gravity
253		Inertia
254		Mass
255		Pressure
256		Weight
257		Work
258	Fuels	...
259		Fractional distillation
260	Genetics	Internal/external combustion
261		...
262		Chromosomes
263		Diversity
264		DNA
265		Dominant/recessive
266		Genes
267		Genotype/phenotype
268		Inheritance
269		Mitosis/meiosis
270	Heat	Mutations
271		Punnett square
272		Zygote
273		...
274		Conduction/convection
275		Coolant
276		Diffusion/transformation



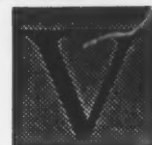
Science

Code Verb	Link A	Link B
277		Expansion/contraction
278		Fusion/vaporization
279		Infrared
280		Insulation
281		Radiation
282		Temperature
283	Human/animal	...
284		Aging
285		Blood cells/platelets
286		Blood/blood pressure
287		Cardiovascular system
288		Circulatory system
289		Development
290		Digestive system
291		Diseases
292		Endocrine system
293		Excretory system
294		Hemoglobin
295		Homeostasis
296		Hormones
297		Immune system
298		Maintenance/management
299		Metabolism
300		Muscular system
301		Nervous system
302		Organs/transplants
303		Plasma
304		Reproductive system
305		Respiratory system
306		Skeletal system
307		Skin
308		Tissues
309		Weight gain/loss
310	Kingdoms	...
311		Animalia
312		Fungi
313		Monera
314		Plantae
315		Protista
316	Lenses	...
317		Concave/convex
318		Focal length
319		Human eye
320	Light	...
321		Angle of incidence/reflection
322		Critical angle—fiber optics



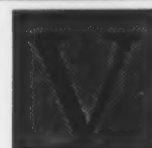
Science

Code Verb	Link A	Link B
323		Diffraction
324		Electromagnetic radiation
325		Electromagnetic spectrum
326		Florescent
327		Incandescent
328		Lasers
329		Opaque
330		Photoelectric
331		Photons
332		Polarization
333		Refraction
334		Speed
335		Translucent/transparent
336		Ultraviolet
337	Matter	...
338		Density
339		Divisibility
340		Motion/inertia
341		Phases/states
342		Properties
343		Structure
344		Substance
345		Uses
346	Mixtures	...
347	Molecules	...
348	Motion	...
349		Acceleration/deceleration
350		Action/reaction
351		Circular
352		Laws
353		Projectile
354		Speed
355		Velocity
356		Vibrations/waves
357	Oceans	...
358		Circulation
359		Currents
360		Resources
361		Structure, e.g., floor, reefs
362		Tides
363		Water cycle
364		Waves
365	Organisms	...
366		Adaptation
367		Development
368		Energy capture/release



Science

Code Verb	Link A	Link B
369		Life cycle
370		Reproduction
371	Periodic table	...
372		Families
373		Metallic luster
374		Metalloids
375		Non-metals
376		Properties
377		Transition metals
378	Plants	...
379		Fertilization
380		Nitrogen cycle
381		Oxygen/carbon dioxide cycle
382		Parts/functions
383		Photosynthesis
384		Pollen
385		Propagation
386		Pruning
387		Temperature—role of
388		Water
389	Solutions	...
390		Distillation
391		Polar/non-polar
392		Saturated/unsaturated
393		Soluble/insoluble
394		Solute
395		Solvent
396	Sound	...
397		Amplification
398		Audible range
399		Carriers/insulators
400		Compression
401		Controls
402		Decibels/intensity
403		Doppler effect
404		Frequency—hertz
405		Hearing
406		Noise/acoustics
407		Overtones/harmonies
408		Pitch/frequency
409		Quality
410		Reflection/interference
411		Resonance
412		Retraction/diffraction
413		Speed
414		Vocal cords



Science

Code	Verb	Link A	Link B
415			Waves—pitch frequency
416		Theory of evolution	...
417		Universe	...
418			Asteroids/meteors/meteorites
419			Big Bang Theory
420			Comets
421			Eclipses—lunar/solar
422			Galaxies
423			Light year
424			Lunar cycles
425			Lunar phases
426			Moons
427			Planets
428			Solar system
429			Stars
430			Sun
431		Weather/climate	...
432			Air mass
433			Altitude
434			Atmosphere
435			Barometric pressure
436			Clouds
437			Dew point
438			Fronts
439			Greenhouse effect
440			Jet stream
441			Ozone layer
442			Precipitation
443			Relative humidity
444			Wind
445		Work	...
446			Inclined planes—edges/screws
447			Levers
448			Pulleys
449	Identifies	Acids/bases	...
450		Animals	...
451		Compounds—inorganic	...
452		Compounds—organic	...
453			Acid rain
454			Chemical equations
455			Chemical reactions
456			Classes
457			Hydrocarbons
458			Suffixes
459		Cycles	...
460			Biological



Science

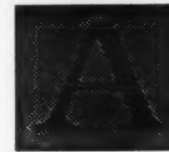
Code Verb	Link A	Link B
461		Decay
462		Energy
463		Food webs
464		Water/climate
465		Weather
466		...
467	Definitions	Operational
468		...
469	Diseases	Names/symbols
470	Elements	...
471	Food groups	...
472	Matter	Chemical properties
473		Phases/states
474		Physical properties
475		Structure
476		Uses
477	Measurement units	...
478	Oceans	...
479	Organisms	...
480		Bacteria
481		Fungi
482		Insects
483		Plants
484		Vertebrates/invertebrates
485		Viruses
486	Questions	Research
487	Rocks/minerals	...
488	Stars	...
489 Measures	Distance/length	...
490	Electric currents	...
491	Energy/work	...
492	Force	...
493	Mass/weight	...
494	Pressure	...
495	Temperature	F/C
496	Time	...
497	Volume	Liquids/solids
498 Uses	Computers	...
499		Information processing
500		Mathematical applications
501		Problem solving

Free Enterprise

Free Enterprise



Code	Link A	Link B	Verb
061	Business cycles	...	Describes/Explains
062		Economic growth	
118	Cost factors	...	Identifies
119		Advertising	
120		Capital resources	
121		Fringe benefits	
122		Human resources	
123		Natural resources	
124		Pricing	
125		Wages	
063	Credit responsibilities	...	Describes/Explains
064	Division of labor	...	
065	Economic concepts	...	
066		Balance of payments	
067		Free market	
068		Full employment	
069		Marketing	
070		Opportunity costs	
071		Scarcity	
072		Supply/demand	
073		Trade deficit	
003	Economic indicators	...	Defines
004		Consumer Price Index	
005		GNP	
074	Economic interdependence	...	Describes/Explains
075		Natural resources	
001	Economic systems	Communism/socialism	Compares
002		Free enterprise/mixed	
006	Economic terms	...	Defines
007		Assets	
008		Bonds	
009		Budget	
010		Capital	
011		Capitalism	
012		Collateral	
013		Competition	
014		Consumer	
015		Cost	
016		Credit	
017		Currency	
018		Depreciation	
019		Distribution	
020		Economic terms	
021		Economics	
022		Entrepreneur	
023		Equity	



Free Enterprise

Code	Link A	Link B	Verb
024		Exchange rate	
025		Expenses	
026		Goods	
027		Import/export	
028		Income	
029		Inflation/deflation	
030		Investments	
031		Labor	
032		Land	
033		Lease	
034		Liability	
035		Loans	
036		Margin	
037		Market	
038		Merchandise	
039		Monopoly	
040		Obsolescence	
041		Price	
042		Producer	
043		Productivity	
044		Profit	
045		Profit motive	
046		Property	
047		Proprietor	
048		Recession/depression	
049		Resources	
050		Retail	
051		Retained earnings	
052		Savings	
053		Services	
054		Stocks/securities	
055		Trade	
056		Trade barriers	
057		Trade—international	
058		Unemployment rate	
059		Wholesale	
060		Work force	
076	Federal Reserve	...	Describes/Explains
077		Money supply	
078	Financing	...	
079		Cash	
080		Credit	
081		Credit—commercial	
082		Credit—consumer	
083		Installment buying	
084	Foreign trade	...	

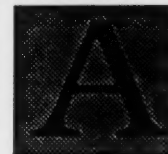


Free Enterprise

Code	Link A	Link B	Verb
085		Consumer/worker impact	
086		Foreign affairs	
087	Government impact/costs	...	
088		Interest rates	
089		Laws	
090		Money supply	
091		Quotas	
092		Regulations	
093		Spending	
094		Subsidies	
095		Tariffs	
096		Taxes	
097		Working conditions	
098		Zoning	
099	Insurance types	...	
100		Benefits	
101		Costs	
102		Purposes	
103	Investment risks/types	...	
104		Bonds	
105		Gold	
106		Land	
107		Savings accounts/money market	
108		Stocks	
126	Job opportunities	...	Identifies
127		Emerging fields	
109	Labor relations	...	Describes/Explains
110	Merchandising	...	
111	Money role	...	
112	Money supply	...	
113		Effect on interest/prices	
114	Needs/wants	...	
115		Goods/services	
128	Personal budget	...	Prepares
129		Needs/income/wants	
116	Taxation	...	Describes/Explains
117		Function	

Language Arts

Language Arts



Code	Link A	Link B	Verb
048	Agenda	...	Composes/Edits
049	Audio-visual aids	...	
050		Graphs	
025	Author's style/approach	...	Appreciates
026		Characters	
027		Imagery	
028		Incidents/details	
029		Language usage	
030		Mood/tone	
031		Organization/structure	
032		Plot	
033		Sequence	
034		Setting	
051	Bibliographies	...	Composes/Edits
013	Definitions	...	Applies/Uses
001	Diction/structure	...	Adapts
002		Audience	
003		Purpose	
004		Situation	
271	Dictionary	...	Uses
035	Directions/task	...	Attends
052	Drafts—oral/written	...	Composes/Edits
053		Consistency	
054		Extemporaneous	
055		Originality	
056		Sequence	
057		Tone	
014	Figures of speech	...	Applies/Uses
015		Hyperbole	
016		Idiomatic expressions	
017		Metaphor	
018		Personification	
019		Simile	
261	Formal speech	...	Presents
262		Expository	
263		Persuasive	
058	Forms/documents	...	Composes/Edits
059		Classified ads	
060		College applications	
061		Financial applications	
062		Job applications	
063		Resumes	
064		Social Security applications	
065		W-4 forms	
066		Work permits	
192	Function of words	...	Identifies



Language Arts

Code	Link A	Link B	Verb
193		Adjectives/adverbs	
194		Direct/indirect object	
195		Nouns/verbs	
196		Phrases/clauses	
197		Prepositions/conjunctions	
198		Subject/predicate	
150	Grammar system	...	Describes/Explains
151		Usage	
264	Informal speech	...	Presents
265		Discussion	
266		Information requests	
267		Information supplying	
268		Interpretation	
269		Interview	
270		Persuasive	
121	Information—oral	...	Comprehends
167		...	Evaluates
199		...	Identifies
236		...	Infers/Predicts
168		Adequacy/sufficiency	Evaluates
169		Appropriateness	
122		Assumptions/biases	Comprehends
200			Identifies
237			Infers/Predicts
123		Cause/effect relationships	Comprehends
238			Infers/Predicts
124		Character traits	Comprehends
239			Infers/Predicts
170		Clarity	Evaluates
125		Comparisons/contrasts	Comprehends
240			Infers/Predicts
171		Conclusions/solutions	Evaluates
126		Conclusions	Comprehends
127		Context	
201			Identifies
241			Infers/Predicts
242		Details	
202		Dialects	Identifies
203		Emotional tone	
204		Euphemisms	
205		Explicit/implicit	
172		Fact/opinion	Evaluates
206		Irony/satire	Identifies
207		Key words/phrases	
128		Main idea	Comprehends
208			Identifies



Language Arts

Code	Link A	Link B	Verb
243			Infers/Predicts
209		Mood/tone	Identifies
173		Non-print media	Evaluates
210		Outcomes/solutions	Identifies
244			Infers/Predicts
211		Prior knowledge	Identifies
174		Propaganda techniques	Evaluates
212			Identifies
129		Purpose	Comprehends
245			Infers/Predicts
130		Rationale	Comprehends
246			Infers/Predicts
175		Reality/fantasy	Evaluates
176		Relationship of ideas	
177		Relevant/irrelevant	
178		Sources	
213		Stereotypes	Identifies
179		Validity	Evaluates
131		Varied types	Comprehends
038	Information—oral/written	...	Collects/Organizes
039		Classifications	
040		Discussions	
041		Library resources	
042		Notes	
043		Observations	
044		Outlines	
045		Personal experiences	
046		Reading	
047		Research—formal	
132	Information—written	...	Comprehends
180		...	Evaluates
214		...	Identifies
247		...	Infers/Predicts
215		Abbreviations	Identifies
181		Adequacy/sufficiency	Evaluates
182		Appropriateness	
133		Assumptions/biases	Comprehends
216			Identifies
248			Infers/Predicts
134		Cause/effect relationships	Comprehends
249			Infers/Predicts
135		Character traits	Comprehends
250			Infers/Predicts
136		Charts/tables/graphs	Comprehends
183		Clarity	Evaluates
137		Comparisons/contrasts	Comprehends



Language Arts

Code	Link A	Link B	Verb
251			Infers/Predicts
184		Conclusions/solutions	Evaluates
138		Conclusions	Comprehends
139		Context	
217			Identifies
252			Infers/Predicts
253		Details	
218		Dialects	Identifies
219		Emotional tone	
220		Euphemisms	
140		Evaluations/critiques	Comprehends
221		Explicit/implicit	Identifies
185		Fact/opinion	Evaluates
222		Fiction/non-fiction	Identifies
223		Irony/satire	
224		Key words/phrases	
141		Main idea	Comprehends
225			Identifies
254			Infers/Predicts
142		Mood	Comprehends
226		Mood/tone	Identifies
255			Infers/Predicts
227		Outcomes/solutions	Identifies
256			Infers/Predicts
143		Persuasive text	Comprehends
144		Plot	
257		Plot/setting	Infers/Predicts
186		Propaganda techniques	Evaluates
228			Identifies
145		Purpose	Comprehends
258			Infers/Predicts
146		Rationale	Comprehends
259			Infers/Predicts
187		Reality/fantasy	Evaluates
188		Relationship of ideas	
189		Relevant/irrelevant	
147		Sequence	Comprehends
260			Infers/Predicts
148		Setting	Comprehends
190		Sources	Evaluates
229		Stereotypes	Identifies
149		Summaries	Comprehends
191		Validity	Evaluates
067	Journals/diaries	...	Composes/Edits
068		Personal recollections	
152	Language	...	Describes/Explains



Language Arts

Code	Link A	Link B	Verb
153		Families	
154		Origin/development	
155	Language situations	...	
156		Audience	
157		Purpose	
272	Library resources	...	Uses
273		Almanacs/yearbooks	
274		Atlases	
275		Card catalogs	
276		Encyclopedia	
277		Guides	
158	New words	Origin/development	Describes/Explains
036	Nonverbal cues	...	Attends
069	Notes	...	Composes/Edits
070		Lecture	
071	Oral presentations	...	
072		Structure	
073	Outlines	...	
074	Paragraphs	...	
075		Cause/effect relationships	
076		Coherence	
077		Details	
078		Sequence	
079		Topic sentences/main idea	
080		Transitions	
159	Perceptual effects	...	Describes/Explains
160		Assumptions/biases	
161		Emotional tone	
162		Euphemisms	
163		Irony/satire	
164		Propaganda techniques	
165		Stereotypes	
081	Poetry	...	Composes/Edits
082		Form	
083		Imagery	
084		Rhyme	
085		Rhythm	
086		Tone	
230	Point of view	First/third person	Identifies
231	Purpose/strategy	...	
232		Listening	
233		Reading	
234		Speaking	
166		Word groups	Describes/Explains
235		Writing	Identifies
087	Reports/essays	...	Composes/Edits



Language Arts

Code	Link A	Link B	Verb
088		Editorials/opinions	
089		Evaluations/critiques	
090		Expositions	
091		Information requests	
092		Information supplying	
093		Narratives	
094		Persuasive text	
095		Proofs/revisions	
096		Research—formal	
097		Short stories/plays	
098		Summaries	
099	Sentences	...	
100		Adjectives	
101		Adverbs	
102		Capitalization	
103		Completeness	
104		Direct/indirect object	
105		Fragments—w/o	
106		Irregular expressions—w/o	
107		Modifiers	
108		Nouns	
109		Order of words	
110		Predicates	
111		Pronouns	
112		Punctuation	
113		Run-on—w/o	
114		Spelling	
115		Subject/verb agreement	
116		Subjects	
117		Verbs	
118	Social communications/letters	...	
119		Business	
120		Personal	
005	Strategy	Listening	Adapts
006		Reading	
007		Speaking	
008		Writing	
020	Study habits/methods	...	Applies/Uses
021		Previewing	
022		Prior knowledge	
023		Skimming	
024		Test-taking	
009	Style	...	Adapts
010		Audience	
011		Cultural differences	
012		Purpose	



Language Arts

Code	Link A	Link B	Verb
278	Text resources	...	Uses
279		Glossaries	
280		Indexes	
281		Table of contents	
282	Thesaurus	...	Attends
037	Verbal cues	...	

Mathematics

Mathematics

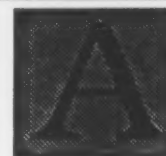


Code	Link A	Link B	Verb
221	Absolute value	...	Solves problems
261	Addition	...	Uses calculator
022		Algebraic fractions	Computes
023		Binomials	
024		Complex fractions	
025		Complex numbers	
026		Decimals	
027		Fractions	
028		Mentally	
029		Mixed numbers	
030		Monomials	
031		Polynomials	
032		Radicals	
033		Rational expressions	
034		Whole numbers	
001	Algebraic expressions	...	Calculates/Evaluates
094	Angles	...	Constructs
136		...	Estimates/Rounds
153		...	Formulates/Verifies
154		Acute/obtuse/right	
095		Angle bisectors	Constructs
155		Complementary	Formulates/Verifies
096		Congruent angles	Constructs
115		Degree/radian measurement	Converts
156		Supplementary	Formulates/Verifies
128	Angles/circles/arcs	...	Distinguishes
157	Arguments	Valid/invalid	Formulates/Verifies
097	Charts/tables/graphs	...	Constructs
174		...	Interprets
098		Data points	Constructs
175		Functions	Interprets
002	Common factors	...	Calculates/Evaluates
158	Conclusions	...	Formulates/Verifies
239	Conditionals	...	Understands
129	Congruence/similarity	Geometric figures	Distinguishes
003	Congruent	Triangles	Calculates/Evaluates
222	Coordinate geometry	...	Solves problems
223		Conic sections	
224		Distance formula	
225		Equation of a line	
116	Decimals/fractions/ratios/percents	...	Converts
130	Deductive/inductive reasoning	...	Distinguishes
240	Definitions	...	Understands
241		Conditions	
242		Standards	
179	Direct	...	Measures



Mathematics

Code	Link A	Link B	Verb
180		Angles	
181		Distance	
182		Temperature	
183		Time	
184		Volume	
185		Weight	
262	Division	...	Uses calculator
035		Algebraic fractions	Computes
036		Binomials	
037		Complex fractions	
038		Complex numbers	
039		Decimals	
040		Fractions	
041		Mentally	
042		Mixed numbers	
043		Monomials	
044		Polynomials	
045		Radicals	
046		Rational expressions	
047		Whole numbers	
137	Empirical probabilities	...	Estimates/Rounds
138		Population parameters	
161	English measures	Length/volume/weight	Identifies
131	Equal/not equal	...	Distinguishes
048	Equation of line	...	Computes
049	Equations	...	
050		Absolute value	
132	Estimate/exact value	...	Distinguishes
051	Exact values	Trigonometric function	Computes
139	Expected outcomes	...	Estimates/Rounds
140		Everyday occurrences	
052	Expected values	...	Computes
053		Formula	
054		Probabilities/decimals/fractions/percents	
055		Two or more unrelated events	
196	Exponential	...	Solves equations
212		...	Solves inequalities
197		Analytic	Solves equations
198		Graphic	
263	Exponential functions	...	Uses calculator
056	Factoring	...	Computes
057		Polynomials	
058		Quadratic equations	
004	Factors	Whole numbers/divisibility	Calculates/Evaluates
117	Formula	Equivalent form	Converts
264	Formulas	...	Uses calculator



Mathematics

Code	Link A	Link B	Verb
226		Specified symbols	Solves problems
118	Fractions	...	Converts
119		Mixed numbers	
162		Parts	Identifies
120		Reciprocal form	Converts
121		Simplest form	
227	Fractions/decimals/ratios/percents	...	Solves problems
228		Direct/indirect variation	
099	Frequency tables	...	Constructs
243	Function concept	...	Understands
163	Function notations	...	Identifies
229	Generate conclusions	Deductive reasoning	Solves problems
100	Geometric figures	...	Constructs
164		...	Identifies
005		Area	Calculates/Evaluates
141			Estimates/Rounds
165		Circles/angles/arcs/polygons	Identifies
006		Circumference	Calculates/Evaluates
142			Estimates/Rounds
101		Compass/straight edge	Constructs
007		Perimeter	Calculates/Evaluates
143			Estimates/Rounds
008		Surface area	Calculates/Evaluates
102		Three dimensional figures	Constructs
103		Transformation	
244		Visual perception	Understands
009		Volume	Calculates/Evaluates
144			Estimates/Rounds
145		Weight	
104	Graphs	...	Constructs
105		Cumulative frequency/computer	
106	Graphs of function	...	
166		...	Identifies
107		Absolute functions	Constructs
108		Inverse functions	
109		Linear functions	
110		Quadratic functions	
111		Trigonometric functions	
186	Indirect	...	Measures
187		Formulas	
059	Inequalities	...	Computes
060		Absolute value	
010	Least/common denominators	...	Calculates/Evaluates
011	Least/common multiples	...	
245	Line/angle	Relationships	Understands
199	Linear	...	Solves equations



Mathematics

Code	Link A	Link B	Verb
213		...	Solves inequalities
200		Analytic	Solves equations
214			Solves inequalities
201		Graphic	Solves equations
215			Solves inequalities
012	Linear relationship	Ordered pairs	Calculates/Evaluates
246	Linear systems	Solutions	Understands
112	Lines	...	Constructs
167		...	Identifies
113		Congruent segments	Constructs
114		Parallel/perpendicular	
168			Identifies
169		Ray/segment	
170		Vertical/horizontal	
202	Logarithmic	...	Solves equations
265	Logarithmic functions	...	Uses calculator
013	Mean/median/mode	...	Calculates/Evaluates
014	Measurement	Precision	
188	Metric	...	Measures
189		Area	
190		Distance	
191		Temperature	
192		Volume	
193		Weight	
171	Metric measures	Length/volume/weight	Identifies
172	Missing/irrelevant data	Word problems	
266	Multiplication	...	Uses calculator
061		Algebraic fractions	Computes
062		Binomials	
063		Complex fractions	
064		Complex numbers	
065		Decimals	
066		Fractions	
067		Mentally	
068		Mixed numbers	
069		Monomials	
070		Polynomials	
071		Radicals	
072		Rational expressions	
073		Whole numbers	
247	Number theory	Arithmetic progression	Understands
248		Counting arrangements	
249		Effect of extremes/mean	
250		Effect of extremes/median	
251		Effects of extremes/range	
252		Geometric progression	



Mathematics

Code	Link A	Link B	Verb
253		Sequential outcomes	
146	Numbers	Add/subtract/divide/multiply	Estimates/Rounds
254	Order of operations	Rules	Understands
015	Percent	In/decrease, markup/discount	Calculates/Evaluates
074	Polynomial functions	...	Computes
075		Table of values	
255	Power/exponent	...	Understands
016	Prime factors	...	Calculates/Evaluates
017	Prime numbers	...	
230	Proportion	...	Solves problems
231		Area	
232		Volume	
233		Weight	
133	Proportion/congruence	...	Distinguishes
203	Quadratic	...	Solves equations
216		...	Solves inequalities
204		Quadratic formula	Solves equations
217			Solves inequalities
159	Questions	...	Formulates/Verifies
122	Radical form	Fractional exponents	Converts
267	Radical numbers	...	Uses calculator
147	Random outcomes	Mathematical expectation	Estimates/Rounds
076	Rational expressions	...	Computes
234		...	Solves problems
194	Rational numbers	...	Orders
195		Number line	
148	Reasonable answers	...	Estimates/Rounds
149		Equations	
150		Successive approximations	
018	Reasoning	Invalid arguments	Calculates/Evaluates
235	Right triangle	...	Solves problems
236		Cosines/sines/tangents	
237	Right triangles	Pythagorean theorem	
134	Scientific/standard notation	...	Distinguishes
077	Slope of line	Intercept form	Computes
078	Square	Vertex	
079	Square root	...	
151	Square roots	...	Estimates/Rounds
123	Square units	...	Converts
019	Statistics	...	Calculates/Evaluates
256		...	Understands
173		Applications	Identifies
257		Error of measure	Understands
258		Probability	
259		Sampling	
020		Test of hypotheses	Calculates/Evaluates



Mathematics

Code	Link A	Link B	Verb
268	Subtraction	...	Uses calculator
080		Algebraic fractions	Computes
081		Binomials	
082		Complex fractions	
083		Complex numbers	
084		Decimals	
085		Fractions	
086		Mentally	
087		Mixed numbers	
088		Monomials	
089		Polynomials	
090		Radicals	
091		Rational expressions	
092		Whole numbers	
176	Symbols	<, >, =, e.g.	Interprets
135	Symmetry/transformation	...	Distinguishes
093	Synthetic division	Polynomials	Computes
260	System of mathematics	Rational number system	Understands
177	System of numbers	Place value	Interprets
178		Rational numbers, e.g., fractions	
205	Systems of	...	Solves equations
218		...	Solves inequalities
206		Analytic	Solves equations
219			Solves inequalities
207		Graphic	Solves equations
220			Solves inequalities
208		Substitution	Solves equations
238		...	Solves problems
209		...	Solves equations
210		Analytic	
211		Graphic	
269	Trigonometric functions	Cosines/sines/tangents	Uses calculator
160	Trigonometric identities	...	Formulates/Verifies
021	Unit measure	Price	Calculates/Evaluates
124	Units	...	Converts
125		Conversion rule	
126		Metric/English—meters/feet, e.g.	
152	Values not given	Equation	Estimates/Rounds
127	Word problems	Mathematical expressions	Converts

Science

Science

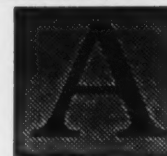


Code	Link A	Link B	Verb
053	Acids/bases	...	Describes/Explains
449		...	Identifies
054		Acid indicators	Describes/Explains
055		Base indicators	
056		Ions	
057	Animals	Neutralization/salts	
058		pH	
450		...	Identifies
059		...	Describes/Explains
060	Atoms	Bonding	
061		Chemical equations	
062		Chemical formulas	
063		Composition, e.g., electrons, protons, neutrons	
064		Mass	
065	Bacteria	Number	
066		Structure	
067		Weight	
068		...	
069		Benefits	
070	Biochemistry	Characteristics	
071		Protein production	
072		Resistance to drugs	
073		...	
074		ATP/ADP	
075	Carbon/organic chemistry	Body heat	
076		Cell respiration	
077		Cellulose	
078		Chlorophyll	
079		Fermentation	
080		Food energy pyramid	
081		Phosphate groups	
082		Photosynthesis	
083		Protein synthesis	
084		Simple sugar	
085		...	
086		Alkane series	
087		Alkene series	
088		Alkyne series	
089		Amino acids	
090		Carbohydrates	
091		Compounds	
092		Cyclic hydrocarbons	
093		Fats	
094		Glucose	
095		Hydrocarbons—derivatives	
096		Hydrocarbons—saturated/unsaturated	



Science

Code	Link A	Link B	Verb
097		Isomers	
098		Lipids	
099		Polyatomic ion	
100		Proteins	
101		Tetrahedron	
102		Vitamins	
103	Cells	...	
104		Diffusion	
105		Division	
106		Eukaryotes	
107		Homeostasis	
108		Osmosis	
109		Parts/functions	
110		Photosynthesis/ATP	
111		Prokaryotes	
112		Respiration	
113		Transport—active/passive	
114	Chemical reactions	...	
115		Activation energy	
116		Catalysts	
117		Concentration	
118		Endothermic	
119		Energy changes	
120		Exothermic	
121		Inhibitors	
122		Mole	
123		Reactants	
001	Chemicals in society	...	Analyzes/Evaluates
002		Drugs	
003		Fertilizers	
004		Food additives	
005		MSG	
006		Vitamins	
037	Classification schemes	...	Applies/Uses
038		Kingdom, phylum, etc.	
124	Color	...	Describes/Explains
125		Blindness	
126		Cones	
127		Pigmentation	
128		Rainbow	
129		Rods	
130		Spectrum	
451	Compounds—inorganic	...	Identifies
452	Compounds—organic	...	
453		Acid rain	
454		Chemical equations	



Science

Code	Link A	Link B	Verb
455		Chemical reactions	
456		Classes	
457		Hydrocarbons	
458		Suffixes	
498	Computers	...	Uses
499		Information processing	
500		Mathematical applications	
501		Problem solving	
131	Conservation	...	Describes/Explains
132		Energy	
133		Matter	
134		Minerals	
135		Soil	
136		Water	
137		Wildlife	
459	Cycles	...	Identifies
460		Biological	
461		Decay	
462		Energy	
463		Food webs	
464		Water/climate	
465		Weather	
466	Definitions	...	
467		Operational	
468	Diseases	...	
489	Distance/length	...	Measures
138	Earth	...	Describes/Explains
139		Climate	
140		Closed system	
141		Composition/structure	
142		Crust	
143		Erosion/weathering	
144		Gravity	
145		Latitude—temperature zones	
146		Longitude—time zones	
147		Mineral cycle	
148		Movement, e.g., earthquakes	
149		Natural resources	
150		Rock cycles	
151		Shape	
152		Water	
153	Earth history	...	
154		Age/composition	
155		Dating	
156		Eras	
157		Fossils/rocks	



Science

Code	Link A	Link B	Verb
158		Superposition	
159	Ecology	...	
160		Biomes	
161		Community	
162		Consumers/producers	
163		Decomposers	
164		Ecosystem	
165		Entropy	
166		Food chain	
167		Food webs	
168		Fossil fuels	
169		Habitats	
170		Herbivores/omnivores/carnivores	
171		Niches	
172		Population	
173		Predators	
174		Succession	
175		Survival mechanisms	
176	Ecosystems	...	
490	Electric currents	...	Measures
177	Electricity	...	Describes/Explains
178		Batteries	
179		Charging	
180		Conductors/insulators	
181		Coulomb's law	
182		Currents—direct/alternating	
183		Friction	
184		Ground	
185		Lightning	
186		Parallel/series circuits	
187		Short circuit	
188		Static	
189		Transistor	
190		Vacuum tube	
191	Electricity—generating	...	
192		Hydroelectric	
193		Incandescent	
194		Motors	
195		Solar	
196		Steam, e.g., nuclear	
197		Transformers	
198	Electricity—measurement	...	
199		Ammeter/voltmeter	
200		Ampere	
201		Fuse	
202		Galvanometer	



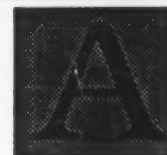
Science

Code	Link A	Link B	Verb
203		Ohm's law	
204		Resistance	
205		Voltage	
206	Electrochemical energy	...	
207		Anode	
208		Cathode	
209		Electrolysis	
210	Electrochemical reactions	Types—cells, batteries, electrodes	
211		...	
212		Activity of metals	
213		Oxidation/reduction	
214	Electromagnetism	...	
215		Coil	
216		Earth	
217		Magnetic fields/force	
218	Electrons	Magnetic poles	
219		Magnets	
220		...	
221		Chemical bonding	
222	Elements	Covalent bonding	
223		Electric charges	
224		Ionic bonds	
225		Magnets	
469	Elements	Names/symbols	Identifies
226	Elements/compounds	...	Describes/Explains
227		Atomic number/weight	
228		Bonding	
229		Catalysts	
230	Energy	Combustion	
231		...	
232		Conversion	
233		Kinetic/potential	
234	Energy/resources	Law of conservation	
235		Mechanical	
236		Momentum	
237		Power	
238		Theory of relativity	
239		Thermal	
240		...	
241		Fossils	
242		Gases	
243		Geothermal	
244		Nuclear	
245		Solar	
246		Water/tides	
247		Wind	



Science

Code	Link A	Link B	Verb
491	Energy/work	...	Measures
007	Environmental issues	...	Analyzes/Evaluates
008		Ecology	
009		Impact statements	
010		Media information	
011		Pollution	
012		Waste management	
013	Experiments	...	
014		Conclusions	
015		Conflicting data	
016		Controls	
017		Data	
018		Inferences	
019		Limitations	
020		Operational definitions	
021		Questions	
022		Replications	
023		Samples	
024		Sources of errors	
025		Variables	
470	Food groups	...	Identifies
248	Force	...	Describes/Explains
492		...	Measures
249		Balanced/unbalanced	Describes/Explains
250		Centrifugal/centripetal	
251		Friction	
252		Gravity	
253		Inertia	
254		Mass	
255		Pressure	
256		Weight	
257		Work	
258	Fuels	...	
259		Fractional distillation	
260		Internal/external combustion	
261	Genetics	...	
262		Chromosomes	
263		Diversity	
264		DNA	
265		Dominant/recessive	
266		Genes	
267		Genotype/phenotype	
268		Inheritance	
269		Mitosis/meiosis	
270		Mutations	
271		Punnett square	



Science

Code	Link A	Link B	Verb
272		Zygote	
273	Heat	...	
274		Conduction/convection	
275		Coolant	
276		Diffusion/transformation	
277		Expansion/contraction	
278		Fusion/vaporization	
279		Infrared	
280		Insulation	
281		Radiation	
282		Temperature	
283	Human/animal	...	
284		Aging	
285		Blood cells/platelets	
286		Blood/blood pressure	
287		Cardiovascular system	
288		Circulatory system	
289		Development	
290		Digestive system	
291		Diseases	
292		Endocrine system	
293		Excretory system	
294		Hemoglobin	
295		Homeostasis	
296		Hormones	
297		Immune system	
298		Maintenance/management	
299		Metabolism	
300		Muscular system	
301		Nervous system	
302		Organs/transplants	
303		Plasma	
304		Reproductive system	
305		Respiratory system	
306		Skeletal system	
307		Skin	
308		Tissues	
309		Weight gain/loss	
310	Kingdoms	...	
311		Animalia	
312		Fungi	
313		Monera	
314		Plantae	
315		Protista	
039	Laboratory instruments	...	Applies/Uses
040	Laboratory techniques	...	

Science

Code	Link A	Link B	Verb
041		Safety	
316	Lenses	...	Describes/Explains
317		Concave/convex	
318		Focal length	
319		Human eye	
320	Light	...	
321		Angle of incidence/reflection	
322		Critical angle—fiber optics	
323		Diffraction	
324		Electromagnetic radiation	
325		Electromagnetic spectrum	
326		Florescent	
327		Incandescent	
328		Lasers	
329		Opaque	
330		Photoelectric	
331		Photons	
332		Polarization	
333		Refraction	
334		Speed	
335		Translucent/transparent	
336		Ultraviolet	
042	Maps/charts/tables/graphs	...	Applies/Uses
493	Mass/weight	...	Measures
051	Matter	...	Classifies
337		...	Describes/Explains
471		...	Identifies
472		Chemical properties	
338		Density	Describes/Explains
339		Divisibility	
340		Motion/inertia	
341		Phases/states	
473			Identifies
474		Physical properties	
342		Properties	Describes/Explains
343		Structure	
475			Identifies
344		Substance	Describes/Explains
345		Uses	
476			Identifies
052	Measurement units	...	Converts
477		...	Identifies
346	Mixtures	...	Describes/Explains
043	Models/theories/laws	...	Applies/Uses
347	Molecules	...	Describes/Explains
348	Motion	...	

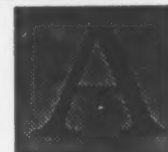


Science

Code	Link A	Link B	Verb
349		Acceleration/deceleration	
350		Action/reaction	
351		Circular	
352		Laws	
353		Projectile	
354		Speed	
355		Velocity	
356		Vibrations/waves	
026	Natural resources	...	Analyzes/Evaluates
027		Allocation	
028		Recovery	
029		Renewable/nonrenewable	
030		Utilization	
357	Oceans	...	Describes/Explains
478		...	Identifies
358		Circulation	Describes/Explains
359		Currents	
360		Resources	
361		Structure, e.g., floor, reefs	
362		Tides	
363		Water cycle	
364		Waves	
365	Organisms	...	
479		...	Identifies
366		Adaptation	Describes/Explains
480		Bacteria	Identifies
367		Development	Describes/Explains
368		Energy capture/release	
481		Fungi	Identifies
482		Insects	
369		Life cycle	Describes/Explains
483		Plants	Identifies
370		Reproduction	Describes/Explains
484		Vertebrates/invertebrates	Identifies
485		Viruses	
371	Periodic table	...	Describes/Explains
372		Families	
373		Metallic luster	
374		Metalloids	
375		Non-metals	
376		Properties	
377		Transition metals	
378	Plants	...	
379		Fertilization	
380		Nitrogen cycle	
381		Oxygen/carbon dioxide cycle	

Science

Code	Link A	Link B	Verb
382		Parts/functions	
383		Photosynthesis	
384		Pollen	
385		Propagation	
386		Pruning	
387		Temperature—role of	
388		Water	
494	Pressure	...	Measures
486	Questions	Research	Identifies
487	Rocks/minerals	...	
031	Science technology	...	Analyzes/Evaluates
032		Implications—economic	
033		Implications—political	
034		Implications—social	
035		Products, e.g., petroleum/textiles	
036		Societal influences	
044	Scientific methods	...	Applies/Uses
045		Analysis—qualitative/quantitative	
046		Data gathering	
047		Observation—direct/indirect	
048		Predictions	
049		Problem identification	
050	Scientific notation	...	
389	Solutions	...	Describes/Explains
390		Distillation	
391		Polar/non-polar	
392		Saturated/unsaturated	
393		Soluble/insoluble	
394		Solute	
395		Solvent	
396	Sound	...	
397		Amplification	
398		Audible range	
399		Carriers/insulators	
400		Compression	
401		Controls	
402		Decibels/intensity	
403		Doppler effect	
404		Frequency—hertz	
405		Hearing	
406		Noise/acoustics	
407		Overtones/harmonies	
408		Pitch/frequency	
409		Quality	
410		Reflection/interference	
411		Resonance	



Science

Code	Link A	Link B	Verb
412		Retraction/diffraction	
413		Speed	
414		Vocal cords	
415		Waves—pitch frequency	
488	Stars	...	Identifies
495	Temperature	F/C	Measures
416	Theory of evolution	...	Describes/Explains
496	Time	...	Measures
417	Universe	...	Describes/Explains
418		Asteroids/meteors/meteorites	
419		Big Bang Theory	
420		Comets	
421		Eclipses—lunar/solar	
422		Galaxies	
423		Light year	
424		Lunar cycles	
425		Lunar phases	
426		Moons	
427		Planets	
428		Solar system	
429		Stars	
430		Sun	
497	Volume	Liquids/solids	Measures
431	Weather/climate	...	Describes/Explains
432		Air mass	
433		Altitude	
434		Atmosphere	
435		Barometric pressure	
436		Clouds	
437		Dew point	
438		Fronts	
439		Greenhouse effect	
440		Jet stream	
441		Ozone layer	
442		Precipitation	
443		Relative humidity	
444		Wind	
445	Work	...	
446		Inclined planes—edges/screws	
447		Levers	
448		Pulleys	

Free Enterprise

Free Enterprise



Code	Link B	Link A	Verb
061	...	Business cycles	Describes/Explains
118	...	Cost factors	Identifies
063	...	Credit responsibilities	Describes/Explains
064	...	Division of labor	
065	...	Economic concepts	
003	...	Economic indicators	Defines
074	...	Economic interdependence	Describes/Explains
006	...	Economic terms	Defines
076	...	Federal Reserve	Describes/Explains
078	...	Financing	
084	...	Foreign trade	
087	...	Government impact/costs	
099	...	Insurance types	
103	...	Investment risks/types	
126	...	Job opportunities	Identifies
109	...	Labor relations	Describes/Explains
110	...	Merchandising	
111	...	Money role	
112	...	Money supply	
114	...	Needs/wants	
128	...	Personal budget	Prepares
116	...	Taxation	Describes/Explains
119	Advertising	Cost factors	Identifies
007	Assets	Economic terms	Defines
066	Balance of payments	Economic concepts	Describes/Explains
100	Benefits	Insurance types	
008	Bonds	Economic terms	Defines
104		Investment risks/types	Describes/Explains
009	Budget	Economic terms	Defines
010	Capital		
120	Capital resources	Cost factors	Identifies
011	Capitalism	Economic terms	Defines
079	Cash	Financing	Describes/Explains
012	Collateral	Economic terms	Defines
001	Communism/socialism	Economic systems	Compares
013	Competition	Economic terms	Defines
014	Consumer		
004	Consumer Price Index	Economic indicators	
085	Consumer/worker impact	Foreign trade	Describes/Explains
015	Cost	Economic terms	Defines
101	Costs	Insurance types	Describes/Explains
016	Credit	Economic terms	Defines
080		Financing	Describes/Explains
081	Credit—commercial		
082	Credit—consumer		
017	Currency	Economic terms	Defines



Free Enterprise

Code	Link B	Link A	Verb
018	Depreciation		
019	Distribution		
062	Economic growth	Business cycles	Describes/Explains
020	Economic terms	Economic terms	Defines
021	Economics		
113	Effect on interest/prices	Money supply	Describes/Explains
127	Emerging fields	Job opportunities	Identifies
022	Entrepreneur	Economic terms	Defines
023	Equity		
024	Exchange rate		
025	Expenses		
086	Foreign affairs	Foreign trade	Describes/Explains
002	Free enterprise/mixed	Economic systems	Compares
067	Free market	Economic concepts	Describes/Explains
121	Fringe benefits	Cost factors	Identifies
068	Full employment	Economic concepts	Describes/Explains
117	Function	Taxation	
005	GNP	Economic indicators	Defines
105	Gold	Investment risks/types	Describes/Explains
026	Goods	Economic terms	Defines
115	Goods/services	Needs/wants	Describes/Explains
122	Human resources	Cost factors	Identifies
027	Import/export	Economic terms	Defines
028	Income		
029	Inflation/deflation		
083	Installment buying	Financing	Describes/Explains
088	Interest rates	Government impact/costs	
030	Investments	Economic terms	Defines
031	Labor		
032	Land		
106		Investment risks/types	Describes/Explains
089	Laws	Government impact/costs	
033	Lease	Economic terms	Defines
034	Liability		
035	Loans		
036	Margin		
037	Market		
069	Marketing	Economic concepts	Describes/Explains
038	Merchandise	Economic terms	Defines
077	Money supply	Federal Reserve	Describes/Explains
090		Government impact/costs	
039	Monopoly	Economic terms	Defines
123	Natural resources	Cost factors	Identifies
075		Economic interdependence	Describes/Explains
129	Needs/income/wants	Personal budget	Prepares
040	Obsolescence	Economic terms	Defines



Free Enterprise

Code	Link B	Link A	Verb
070	Opportunity costs	Economic concepts	Describes/Explains
041	Price	Economic terms	Defines
124	Pricing	Cost factors	Identifies
042	Producer	Economic terms	Defines
043	Productivity		
044	Profit		
045	Profit motive		
046	Property		
047	Proprietor		
102	Purposes	Insurance types	Describes/Explains
091	Quotas	Government impact/costs	
048	Recession/depression	Economic terms	Defines
092	Regulations	Government impact/costs	Describes/Explains
049	Resources	Economic terms	Defines
050	Retail		
051	Retained earnings		
052	Savings		
107	Savings accounts/money market	Investment risks/types	Describes/Explains
071	Scarcity	Economic concepts	
053	Services	Economic terms	Defines
093	Spending	Government impact/costs	Describes/Explains
108	Stocks	Investment risks/types	
054	Stocks/securities	Economic terms	Defines
094	Subsidies	Government impact/costs	Describes/Explains
072	Supply/demand	Economic concepts	
095	Tariffs	Government impact/costs	
096	Taxes		
055	Trade	Economic terms	Defines
056	Trade barriers		
073	Trade deficit	Economic concepts	Describes/Explains
057	Trade—international	Economic terms	Defines
058	Unemployment rate		
125	Wages	Cost factors	Identifies
059	Wholesale	Economic terms	Defines
060	Work force		
097	Working conditions	Government impact/costs	Describes/Explains
098	Zoning		

Language Arts

Language Arts



Code	Link B	Link A	Verb
048	...	Agenda	Composes/Edits
049	...	Audio-visual aids	
025	...	Author's style/approach	Appreciates
051	...	Bibliographies	Composes/Edits
013	...	Definitions	Applies/Uses
001	...	Diction/structure	Adapts
271	...	Dictionary	Uses
035	...	Directions/task	Attends
052	...	Drafts—oral/written	Composes/Edits
014	...	Figures of speech	Applies/Uses
261	...	Formal speech	Presents
058	...	Forms/documents	Composes/Edits
192	...	Function of words	Identifies
150	...	Grammar system	Describes/Explains
264	...	Informal speech	Presents
121	...	Information—oral	Comprehends
167	...		Evaluates
199	...		Identifies
236	...		Infers/Predicts
038	...	Information—oral/written	Collects/Organizes
132	...	Information—written	Comprehends
180	...		Evaluates
214	...		Identifies
247	...		Infers/Predicts
067	...	Journals/diaries	Composes/Edits
152	...	Language	Describes/Explains
155	...	Language situations	
272	...	Library resources	Uses
036	...	Nonverbal cues	Attends
069	...	Notes	Composes/Edits
071	...	Oral presentations	
073	...	Outlines	
074	...	Paragraphs	
159	...	Perceptual effects	Describes/Explains
081	...	Poetry	Composes/Edits
231	...	Purpose/strategy	Identifies
087	...	Reports/essays	Composes/Edits
099	...	Sentences	
118	...	Social communications/letters	
020	...	Study habits/methods	Applies/Uses
009	...	Style	Adapts
278	...	Text resources	Uses
282	...	Thesaurus	
037	...	Verbal cues	Attends
215	Abbreviations	Information—written	Identifies
168	Adequacy/sufficiency	Information—oral	Evaluates



Language Arts

Code	Link B	Link A	Verb
181		Information—written	
100	Adjectives	Sentences	Composes/Edits
193	Adjectives/adverbs	Function of words	Identifies
101	Adverbs	Sentences	Composes/Edits
273	Almanacs/yearbooks	Library resources	Uses
169	Appropriateness	Information—oral	Evaluates
182		Information—written	
122	Assumptions/biases	Information—oral	Comprehends
200			Identifies
237			Infers/Predicts
133		Information—written	Comprehends
216			Identifies
248			Infers/Predicts
160		Perceptual effects	Describes/Explains
274	Atlases	Library resources	Uses
002	Audience	Diction/structure	Adapts
156		Language situations	Describes/Explains
010		Style	Adapts
119	Business	Social communications/letters	Composes/Edits
102	Capitalization	Sentences	
275	Card catalogs	Library resources	Uses
123	Cause/effect relationships	Information—oral	Comprehends
238			Infers/Predicts
134		Information—written	Comprehends
249			Infers/Predicts
075		Paragraphs	Composes/Edits
124	Character traits	Information—oral	Comprehends
239			Infers/Predicts
135		Information—written	Comprehends
250			Infers/Predicts
026	Characters	Author's style/approach	Appreciates
136	Charts/tables/graphs	Information—written	Comprehends
170	Clarity	Information—oral	Evaluates
183		Information—written	
039	Classifications	Information—oral/written	Collects/Organizes
059	Classified ads	Forms/documents	Composes/Edits
076	Coherence	Paragraphs	
060	College applications	Forms/documents	
125	Comparisons/contrasts	Information—oral	Comprehends
240			Infers/Predicts
137		Information—written	Comprehends
251			Infers/Predicts
103	Completeness	Sentences	Composes/Edits
171	Conclusions/solutions	Information—oral	Evaluates
184		Information—written	
126	Conclusions	Information—oral	Comprehends



Language Arts

Code	Link B	Link A	Verb
138		Information—written	
053	Consistency	Drafts—oral/written	Composes/Edits
127	Context	Information—oral	Comprehends
201			Identifies
241			Infers/Predicts
139		Information—written	Comprehends
217			Identifies
252			Infers/Predicts
011	Cultural differences	Style	Adapts
242	Details	Information—oral	Infers/Predicts
253		Information—written	
077		Paragraphs	Composes/Edits
202	Dialects	Information—oral	Identifies
218		Information—written	
194	Direct/indirect object	Function of words	
104		Sentences	Composes/Edits
265	Discussion	Informal speech	Presents
040	Discussions	Information—oral/written	Collects/Organizes
088	Editorials/opinions	Reports/essays	Composes/Edits
203	Emotional tone	Information—oral	Identifies
219		Information—written	
161		Perceptual effects	Describes/Explains
276	Encyclopedia	Library resources	Uses
204	Euphemisms	Information—oral	Identifies
220		Information—written	
162		Perceptual effects	Describes/Explains
140	Evaluations/critiques	Information—written	Comprehends
089		Reports/essays	Composes/Edits
205	Explicit/implicit	Information—oral	Identifies
221		Information—written	
090	Expositions	Reports/essays	Composes/Edits
262	Expository	Formal speech	Presents
054	Extemporaneous	Drafts—oral/written	Composes/Edits
172	Fact/opinion	Information—oral	Evaluates
185		Information—written	
153	Families	Language	Describes/Explains
222	Fiction/non-fiction	Information—written	Identifies
061	Financial applications	Forms/documents	Composes/Edits
230	First/third person	Point of view	Identifies
082	Form	Poetry	Composes/Edits
105	Fragments—w/o	Sentences	
279	Glossaries	Text resources	Uses
050	Graphs	Audio-visual aids	Composes/Edits
277	Guides	Library resources	Uses
015	Hyperbole	Figures of speech	Applies/Uses
016	Idiomatic expressions		



Language Arts

Code	Link B	Link A	Verb
027	Imagery	Author's style/approach	Appreciates
083		Poetry	Composes/Edits
028	Incidents/details	Author's style/approach	Appreciates
280	Indexes	Text resources	Uses
266	Information requests	Informal speech	Presents
091		Reports/essays	Composes/Edits
267	Information supplying	Informal speech	Presents
092		Reports/essays	Composes/Edits
268	Interpretation	Informal speech	Presents
269	Interview		
206	Irony/satire	Information—oral	Identifies
223		Information—written	
163		Perceptual effects	Describes/Explains
106	Irregular expressions—w/o	Sentences	Composes/Edits
062	Job applications	Forms/documents	
207	Key words/phrases	Information—oral	Identifies
224		Information—written	
029	Language usage	Author's style/approach	Appreciates
070	Lecture	Notes	Composes/Edits
041	Library resources	Information—oral/written	Collects/Organizes
232	Listening	Purpose/strategy	Identifies
005		Strategy	Adapts
128	Main idea	Information—oral	Comprehends
208			Identifies
243			Infers/Predicts
141		Information—written	Comprehends
225			Identifies
254			Infers/Predicts
017	Metaphor	Figures of speech	Applies/Uses
107	Modifiers	Sentences	Composes/Edits
142	Mood	Information—written	Comprehends
030	Mood/tone	Author's style/approach	Appreciates
209		Information—oral	Identifies
226		Information—written	
255			Infers/Predicts
093	Narratives	Reports/essays	Composes/Edits
173	Non-print media	Information—oral	Evaluates
042	Notes	Information—oral/written	Collects/Organizes
108	Nouns	Sentences	Composes/Edits
195	Nouns/verbs	Function of words	Identifies
043	Observations	Information—oral/written	Collects/Organizes
109	Order of words	Sentences	Composes/Edits
031	Organization/structure	Author's style/approach	Appreciates
154	Origin/development	Language	Describes/Explains
158		New words	
055	Originality	Drafts—oral/written	Composes/Edits



Language Arts

Code	Link B	Link A	Verb
210	Outcomes/solutions	Information—oral	Identifies
244			Infers/Predicts
227		Information—written	Identifies
256			Infers/Predicts
044	Outlines	Information—oral/written	Collects/Organizes
120	Personal	Social communications/letters	Composes/Edits
045	Personal experiences	Information—oral/written	Collects/Organizes
068	Personal recollections	Journals/diaries	Composes/Edits
018	Personification	Figures of speech	Applies/Uses
270	Persuasive	Informal speech	Presents
263		Formal speech	
143	Persuasive text	Information—written	Comprehends
094		Reports/essays	Composes/Edits
196	Phrases/clauses	Function of words	Identifies
032	Plot	Author's style/approach	Appreciates
144		Information—written	Comprehends
257	Plot/setting		Infers/Predicts
110	Predicates	Sentences	Composes/Edits
197	Prepositions/conjunctions	Function of words	Identifies
021	Previewing	Study habits/methods	Applies/Uses
211	Prior knowledge	Information—oral	Identifies
022		Study habits/methods	Applies/Uses
111	Pronouns	Sentences	Composes/Edits
095	Proofs/revisions	Reports/essays	
174	Propaganda techniques	Information—oral	Evaluates
212			Identifies
186		Information—written	Evaluates
228			Identifies
164		Perceptual effects	Describes/Explains
112	Punctuation	Sentences	Composes/Edits
003	Purpose	Diction/structure	Adapts
129		Information—oral	Comprehends
245			Infers/Predicts
145		Information—written	Comprehends
258			Infers/Predicts
157		Language situations	Describes/Explains
012		Style	Adapts
130	Rationale	Information—oral	Comprehends
246			Infers/Predicts
146		Information—written	Comprehends
259			Infers/Predicts
046	Reading	Information—oral/written	Collects/Organizes
233		Purpose/strategy	Identifies
006		Strategy	Adapts
175	Reality/fantasy	Information—oral	Evaluates
187		Information—written	



Language Arts

Code	Link B	Link A	Verb
176	Relationship of ideas	Information—oral	
188		Information—written	
177	Relevant/irrelevant	Information—oral	
189		Information—written	
047	Research—formal	Information—oral/written	Collects/Organizes
096		Reports/essays	Composes/Edits
063	Resumes	Forms/documents	
084	Rhyme	Poetry	
085	Rhythm		
113	Run-on—w/o	Sentences	
033	Sequence	Author's style/approach	Appreciates
056		Drafts—oral/written	Composes/Edits
147		Information—written	Comprehends
260			Infers/Predicts
078		Paragraphs	Composes/Edits
034	Setting	Author's style/approach	Appreciates
148		Information—written	Comprehends
097	Short stories/plays	Reports/essays	Composes/Edits
019	Simile	Figures of speech	Applies/Uses
004	Situation	Diction/structure	Adapts
023	Skimming	Study habits/methods	Applies/Uses
064	Social Security applications	Forms/documents	Composes/Edits
178	Sources	Information—oral	Evaluates
190		Information—written	
234	Speaking	Purpose/strategy	Identifies
007		Strategy	Adapts
114	Spelling	Sentences	Composes/Edits
213	Stereotypes	Information—oral	Identifies
229		Information—written	
165		Perceptual effects	Describes/Explains
072	Structure	Oral presentations	Composes/Edits
198	Subject/predicate	Function of words	Identifies
115	Subject/verb agreement	Sentences	Composes/Edits
116	Subjects		
149	Summaries	Information—written	Comprehends
098		Reports/essays	Composes/Edits
281	Table of contents	Text resources	Uses
024	Test-taking	Study habits/methods	Applies/Uses
057	Tone	Drafts—oral/written	Composes/Edits
086		Poetry	
079	Topic sentences/main idea	Paragraphs	
080	Transitions		
151	Usage	Grammar system	Describes/Explains
179	Validity	Information—oral	Evaluates
191		Information—written	
131	Varied types	Information—oral	Comprehends



Language Arts

Code	Link B	Link A	Verb
117	Verbs	Sentences	Composes/Edits
065	W-4 forms	Forms/documents	
166	Word groups	Purpose/strategy	Describes/Explains
066	Work permits	Forms/documents	Composes/Edits
235	Writing	Purpose/strategy	Identifies
008		Strategy	Adapts

Mathematics

Mathematics



Code	Link B	Link A	Verb
221	...	Absolute value	Solves problems
261	...	Addition	Uses calculator
001	...	Algebraic expressions	Calculates/Evaluates
094	...	Angles	Constructs
136	...		Estimates/Rounds
153	...		Formulates/Verifies
128	...	Angles/circles/arcs	Distinguishes
097	...	Charts/tables/graphs	Constructs
174	...		Interprets
002	...	Common factors	Calculates/Evaluates
158	...	Conclusions	Formulates/Verifies
239	...	Conditionals	Understands
222	...	Coordinate geometry	Solves problems
116	...	Decimals/fractions/ratios/percents	Converts
130	...	Deductive/inductive reasoning	Distinguishes
240	...	Definitions	Understands
179	...	Direct	Measures
262	...	Division	Uses calculator
137	...	Empirical probabilities	Estimates/Rounds
131	...	Equal/not equal	Distinguishes
048	...	Equation of line	Computes
049	...	Equations	
132	...	Estimate/exact value	Distinguishes
139	...	Expected outcomes	Estimates/Rounds
052	...	Expected values	Computes
196	...	Exponential	Solves equations
212	...		Solves inequalities
263	...	Exponential functions	Uses calculator
056	...	Factoring	Computes
264	...	Formulas	Uses calculator
118	...	Fractions	Converts
227	...	Fractions/decimals/ratios/percents	Solves problems
099	...	Frequency tables	Constructs
243	...	Function concept	Understands
163	...	Function notations	Identifies
100	...	Geometric figures	Constructs
164	...		Identifies
104	...	Graphs	Constructs
106	...	Graphs of function	
166	...		Identifies
186	...	Indirect	Measures
059	...	Inequalities	Computes
010	...	Least/common denominators	Calculates/Evaluates
011	...	Least/common multiples	
199	...	Linear	Solves equations
213	...		Solves inequalities



Mathematics

Code	Link B	Link A	Verb
112	...	Lines	Constructs
167	...		Identifies
202	...	Logarithmic	Solves equations
265	...	Logarithmic functions	Uses calculator
013	...	Mean/median/mode	Calculates/Evaluates
188	...	Metric	Measures
266	...	Multiplication	Uses calculator
074	...	Polynomial functions	Computes
255	...	Power/exponent	Understands
016	...	Prime factors	Calculates/Evaluates
017	...	Prime numbers	
230	...	Proportion	Solves problems
133	...	Proportion/congruence	Distinguishes
203	...	Quadratic	Solves equations
216	...		Solves inequalities
159	...	Questions	Formulates/Verifies
267	...	Radical numbers	Uses calculator
076	...	Rational expressions	Computes
234	...		Solves problems
194	...	Rational numbers	Orders
148	...	Reasonable answers	Estimates/Rounds
235	...	Right triangle	Solves problems
134	...	Scientific/standard notation	Distinguishes
079	...	Square root	Computes
151	...	Square roots	Estimates/Rounds
123	...	Square units	Converts
019	...	Statistics	Calculates/Evaluates
256	...		Understands
268	...	Subtraction	Uses calculator
135	...	Symmetry/transformation	Distinguishes
205	...	Systems of	Solves equations
218	...		Solves inequalities
238	...	Trial and error	Solves problems
209	...	Trigonometric	Solves equations
160	...	Trigonometric identities	Formulates/Verifies
124	...	Units	Converts
176	<, >, =, e.g.	Symbols	Interprets
107	Absolute functions	Graphs of function	Constructs
050	Absolute value	Equations	Computes
060		Inequalities	
154	Acute/obtuse/right	Angles	Formulates/Verifies
146	Add/subtract/divide/multiply	Numbers	Estimates/Rounds
022	Algebraic fractions	Addition	Computes
035		Division	
061		Multiplication	
080		Subtraction	



Mathematics

Code	Link B	Link A	Verb
197	Analytic	Exponential	Solves equations
200		Linear	
214			Solves inequalities
206		Systems of	Solves equations
219			Solves inequalities
210		Trigonometric	Solves equations
095		Angles	Constructs
180		Direct	Measures
173		Statistics	Identifies
005		Geometric figures	Calculates/Evaluates
141	Area		Estimates/Rounds
189		Metric	Measures
231		Proportion	Solves problems
247		Number theory	Understands
023		Addition	Computes
036		Division	
062		Multiplication	
081		Subtraction	
165		Geometric figures	Identifies
006			Calculates/Evaluates
142	Circles/angles/arcs/polygons		Estimates/Rounds
101			Constructs
155		Angles	Formulates/Verifies
024		Addition	Computes
037		Division	
063		Multiplication	
082		Subtraction	
025		Addition	
038		Division	
064		Multiplication	
083	Complex numbers	Subtraction	
241		Definitions	Understands
096		Angles	Constructs
113		Lines	
223		Coordinate geometry	Solves problems
125		Units	Converts
236		Right triangle	Solves problems
269		Trigonometric functions	Uses calculator
248		Number theory	Understands
105		Graphs	Constructs
098	Data points	Charts/tables/graphs	
026		Addition	Computes
039		Division	
065		Multiplication	
084		Subtraction	
229		Generate conclusions	Solves problems



Mathematics

Code	Link B	Link A	Verb
115	Degree/radian measurement	Angles	Converts
228	Direct/indirect variation	Fractions/decimals/ratios/percents	Solves problems
181	Distance	Direct	Measures
190		Metric	
224	Distance formula	Coordinate geometry	Solves problems
249	Effect of extremes/mean	Number theory	Understands
250	Effect of extremes/median		
251	Effects of extremes/range		
152	Equation	Values not given	Estimates/Rounds
225	Equation of a line	Coordinate geometry	Solves problems
149	Equations	Reasonable answers	Estimates/Rounds
117	Equivalent form	Formula	Converts
257	Error of measure	Statistics	Understands
140	Everyday occurrences	Expected outcomes	Estimates/Rounds
053	Formula	Expected values	Computes
187	Formulas	Indirect	Measures
122	Fractional exponents	Radical form	Converts
027	Fractions	Addition	Computes
040		Division	
066		Multiplication	
085		Subtraction	
175	Functions	Charts/tables/graphs	Interprets
129	Geometric figures	Congruence/similarity	Distinguishes
252	Geometric progression	Number theory	Understands
198	Graphic	Exponential	Solves equations
201		Linear	
215			Solves inequalities
207		Systems of	Solves equations
220			Solves inequalities
211		Trigonometric	Solves equations
015	In/decrease, markup/discount	Percent	Calculates/Evaluates
077	Intercept form	Slope of line	Computes
018	Invalid arguments	Reasoning	Calculates/Evaluates
108	Inverse functions	Graphs of function	Constructs
161	Length/volume/weight	English measures	Identifies
171		Metric measures	
109	Linear functions	Graphs of function	Constructs
147	Mathematical expectation	Random outcomes	Estimates/Rounds
127	Mathematical expressions	Word problems	Converts
028	Mentally	Addition	Computes
041		Division	
067		Multiplication	
086		Subtraction	
126	Metric/English—meters/feet, e.g.	Units	Converts
029	Mixed numbers	Addition	Computes
042		Division	



Mathematics

Code	Link B	Link A	Verb
119		Fractions	Converts
068		Multiplication	Computes
087		Subtraction	
030	Monomials	Addition	
043		Division	
069		Multiplication	
088		Subtraction	
195	Number line	Rational numbers	Orders
012	Ordered pairs	Linear relationship	Calculates/Evaluates
114	Parallel/perpendicular	Lines	Constructs
168			Identifies
162	Parts	Fractions	
007	Perimeter	Geometric figures	Calculates/Evaluates
143			Estimates/Rounds
177	Place value	System of numbers	Interprets
031	Polynomials	Addition	Computes
044		Division	
057		Factoring	
070		Multiplication	
089		Subtraction	
093		Synthetic division	
138	Population parameters	Empirical probabilities	Estimates/Rounds
014	Precision	Measurement	Calculates/Evaluates
021	Price	Unit measure	
054	Probabilities/decimals/fractions/percents	Expected values	Computes
258	Probability	Statistics	Understands
237	Pythagorean theorem	Right triangles	Solves problems
058	Quadratic equations	Factoring	Computes
204	Quadratic formula	Quadratic	Solves equations
217			Solves inequalities
110	Quadratic functions	Graphs of function	Constructs
032	Radicals	Addition	Computes
045		Division	
071		Multiplication	
090		Subtraction	
033	Rational expressions	Addition	
046		Division	
072		Multiplication	
091		Subtraction	
260	Rational number system	System of mathematics	Understands
178	Rational numbers, e.g., fractions	System of numbers	Interprets
169	Ray/segment	Lines	Identifies
120	Reciprocal form	Fractions	Converts
245	Relationships	Line/angle	Understands
254	Rules	Order of operations	
259	Sampling	Statistics	



Mathematics

Code	Link B	Link A	Verb
253	Sequential outcomes	Number theory	
121	Simplest form	Fractions	Converts
246	Solutions	Linear systems	Understands
226	Specified symbols	Formulas	Solves problems
242	Standards	Definitions	Understands
208	Substitution	Systems of	Solves equations
150	Successive approximations	Reasonable answers	Estimates/Rounds
156	Supplementary	Angles	Formulates/Verifies
008	Surface area	Geometric figures	Calculates/Evaluates
075	Table of values	Polynomial functions	Computes
182	Temperature	Direct	Measures
191		Metric	
020	Test of hypotheses	Statistics	Calculates/Evaluates
102	Three dimensional figures	Geometric figures	Constructs
183	Time	Direct	Measures
103	Transformation	Geometric figures	Constructs
003	Triangles	Congruent	Calculates/Evaluates
051	Trigonometric function	Exact values	Computes
111	Trigonometric functions	Graphs of function	Constructs
055	Two or more unrelated events	Expected values	Computes
157	Valid/invalid	Arguments	Formulates/Verifies
078	Vertex	Square	Computes
170	Vertical/horizontal	Lines	Identifies
244	Visual perception	Geometric figures	Understands
184	Volume	Direct	Measures
009		Geometric figures	Calculates/Evaluates
144			Estimates/Rounds
192		Metric	Measures
232		Proportion	Solves problems
185	Weight	Direct	Measures
145		Geometric figures	Estimates/Rounds
193		Metric	Measures
233		Proportion	Solves problems
034	Whole numbers	Addition	Computes
047		Division	
073		Multiplication	
092		Subtraction	
004	Whole numbers/divisibility	Factors	Calculates/Evaluates
172	Word problems	Missing/irrelevant data	Identifies

Science

Science



Code	Link B	Link A	Verb
053	...	Acids/bases	Describes/Explains
449	...		Identifies
450	...	Animals	
059	...	Atoms	Describes/Explains
068	...	Bacteria	
073	...	Biochemistry	
085	...	Carbon/organic chemistry	
103	...	Cells	
114	...	Chemical reactions	
001	...	Chemicals in society	Analyzes/Evaluates
037	...	Classification schemes	Applies/Uses
124	...	Color	Describes/Explains
451	...	Compounds—inorganic	Identifies
452	...	Compounds—organic	
498	...	Computers	Uses
131	...	Conservation	Describes/Explains
459	...	Cycles	Identifies
466	...	Definitions	
468	...	Diseases	
489	...	Distance/length	Measures
138	...	Earth	Describes/Explains
153	...	Earth history	
159	...	Ecology	
176	...	Ecosystems	
490	...	Electric currents	Measures
177	...	Electricity	Describes/Explains
191	...	Electricity—generating	
198	...	Electricity—measurement	
206	...	Electrochemical energy	
211	...	Electrochemical reactions	
214	...	Electromagnetism	
220	...	Electrons	
226	...	Elements/compounds	
231	...	Energy	
240	...	Energy/resources	
491	...	Energy/work	Measures
007	...	Environmental issues	Analyzes/Evaluates
013	...	Experiments	
470	...	Food groups	Identifies
248	...	Force	Describes/Explains
492	...		Measures
258	...	Fuels	Describes/Explains
261	...	Genetics	
273	...	Heat	
283	...	Human/animal	
310	...	Kingdoms	



Science

Code	Link B	Link A	Verb
039	...	Laboratory instruments	Applies/Uses
040	...	Laboratory techniques	
316	...	Lenses	Describes/Explains
320	...	Light	
042	...	Maps/charts/tables/graphs	Applies/Uses
493	...	Mass/weight	Measures
051	...	Matter	Classifies
337	...		Describes/Explains
471	...		Identifies
052	...	Measurement units	Converts
477	...		Identifies
346	...	Mixtures	Describes/Explains
043	...	Models/theories/laws	Applies/Uses
347	...	Molecules	Describes/Explains
348	...	Motion	
026	...	Natural resources	Analyzes/Evaluates
357	...	Oceans	Describes/Explains
478	...		Identifies
365	...	Organisms	Describes/Explains
479	...		Identifies
371	...	Periodic table	Describes/Explains
378	...	Plants	
494	...	Pressure	Measures
487	...	Rocks/minerals	Identifies
031	...	Science technology	Analyzes/Evaluates
044	...	Scientific methods	Applies/Uses
050	...	Scientific notation	
389	...	Solutions	Describes/Explains
396	...	Sound	
488	...	Stars	Identifies
416	...	Theory of evolution	Describes/Explains
496	...	Time	Measures
417	...	Universe	Describes/Explains
431	...	Weather/climate	
445	...	Work	
349	Acceleration/deceleration	Motion	
054	Acid indicators	Acids/bases	
453	Acid rain	Compounds—organic	Identifies
350	Action/reaction	Motion	Describes/Explains
115	Activation energy	Chemical reactions	
212	Activity of metals	Electrochemical reactions	
366	Adaptation	Organisms	
154	Age/composition	Earth history	
284	Aging	Human/animal	
432	Air mass	Weather/climate	
086	Alkane series	Carbon/organic chemistry	



Science

Code	Link B	Link A	Verb
087	Alkene series		
088	Alkyne series		
027	Allocation	Natural resources	Analyzes/Evaluates
433	Altitude	Weather/climate	Describes/Explains
089	Amino acids	Carbon/organic chemistry	
199	Ammeter/voltmeter	Electricity—measurement	
200	Ampere		
397	Amplification	Sound	
045	Analysis—qualitative/quantitative	Scientific methods	Applies/Uses
321	Angle of incidence/reflection	Light	Describes/Explains
311	Animalia	Kingdoms	
207	Anode	Electrochemical energy	
418	Asteroids/meteors/meteorites	Universe	
434	Atmosphere	Weather/climate	
227	Atomic number/weight	Elements/compounds	
074	ATP/ADP	Biochemistry	
398	Audible range	Sound	
480	Bacteria	Organisms	Identifies
249	Balanced/unbalanced	Force	Describes/Explains
435	Barometric pressure	Weather/climate	
055	Base indicators	Acids/bases	
178	Batteries	Electricity	
069	Benefits	Bacteria	
419	Big Bang Theory	Universe	
460	Biological	Cycles	Identifies
160	Biomes	Ecology	Describes/Explains
125	Blindness	Color	
285	Blood cells/platelets	Human/animal	
286	Blood/blood pressure		
075	Body heat	Biochemistry	
060	Bonding	Atoms	
228		Elements/compounds	
090	Carbohydrates	Carbon/organic chemistry	
287	Cardiovascular system	Human/animal	
399	Carriers/insulators	Sound	
116	Catalysts	Chemical reactions	
229		Elements/compounds	
208	Cathode	Electrochemical energy	
076	Cell respiration	Biochemistry	
077	Cellulose		
250	Centrifugal/centripetal	Force	
070	Characteristics	Bacteria	
179	Charging	Electricity	
221	Chemical bonding	Electrons	
061	Chemical equations	Atoms	
454		Compounds—organic	Identifies



Science

Code	Link B	Link A	Verb
062	Chemical formulas	Atoms	Describes/Explains
472	Chemical properties	Matter	Identifies
455	Chemical reactions	Compounds—organic	
078	Chlorophyll	Biochemistry	Describes/Explains
262	Chromosomes	Genetics	
351	Circular	Motion	
358	Circulation	Oceans	
288	Circulatory system	Human/animal	
456	Classes	Compounds—organic	Identifies
139	Climate	Earth	Describes/Explains
140	Closed system		
436	Clouds	Weather/climate	
215	Coil	Electromagnetism	
230	Combustion	Elements/compounds	
420	Comets	Universe	
161	Community	Ecology	
063	Composition, e.g., electrons, protons, neutrons	Atoms	
141	Composition/structure	Earth	
091	Compounds	Carbon/organic chemistry	
400	Compression	Sound	
317	Concave/convex	Lenses	
117	Concentration	Chemical reactions	
014	Conclusions	Experiments	Analyzes/Evaluates
274	Conduction/convection	Heat	Describes/Explains
180	Conductors/insulators	Electricity	
126	Cones	Color	
015	Conflicting data	Experiments	Analyzes/Evaluates
162	Consumers/producers	Ecology	Describes/Explains
016	Controls	Experiments	Analyzes/Evaluates
401		Sound	Describes/Explains
232	Conversion	Energy	
275	Coolant	Heat	
181	Coulomb's law	Electricity	
222	Covalent bonding	Electrons	
322	Critical angle—fiber optics	Light	
142	Crust	Earth	
359	Currents	Oceans	
182	Currents—direct/alternating	Electricity	
092	Cyclic hydrocarbons	Carbon/organic chemistry	
017	Data	Experiments	Analyzes/Evaluates
046	Data gathering	Scientific methods	Applies/Uses
155	Dating	Earth history	Describes/Explains
461	Decay	Cycles	Identifies
402	Decibels/intensity	Sound	Describes/Explains
163	Decomposers	Ecology	
338	Density	Matter	



Science

Code	Link B	Link A	Verb
289	Development	Human/animal	
367		Organisms	
437	Dew point	Weather/climate	
323	Diffraction	Light	
104	Diffusion	Cells	
276	Diffusion/transformation	Heat	
290	Digestive system	Human/animal	
291	Diseases		
390	Distillation	Solutions	
263	Diversity	Genetics	
339	Divisibility	Matter	
105	Division	Cells	
264	DNA	Genetics	
265	Dominant/recessive		
403	Doppler effect	Sound	
002	Drugs	Chemicals in society	Analyzes/Evaluates
216	Earth	Electromagnetism	Describes/Explains
421	Eclipses—lunar/solar	Universe	
008	Ecology	Environmental issues	Analyzes/Evaluates
164	Ecosystem	Ecology	Describes/Explains
223	Electric charges	Electrons	
209	Electrolysis	Electrochemical energy	
324	Electromagnetic radiation	Light	
325	Electromagnetic spectrum		
292	Endocrine system	Human/animal	
118	Endothermic	Chemical reactions	
132	Energy	Conservation	
462		Cycles	Identifies
368	Energy capture/release	Organisms	Describes/Explains
119	Energy changes	Chemical reactions	
165	Entropy	Ecology	
156	Eras	Earth history	
143	Erosion/weathering	Earth	
106	Eukaryotes	Cells	
293	Excretory system	Human/animal	
120	Exothermic	Chemical reactions	
277	Expansion/contraction	Heat	
495	F/C	Temperature	Measures
372	Families	Periodic table	Describes/Explains
093	Fats	Carbon/organic chemistry	
079	Fermentation	Biochemistry	
379	Fertilization	Plants	
003	Fertilizers	Chemicals in society	Analyzes/Evaluates
326	Florescent	Light	Describes/Explains
318	Focal length	Lenses	
004	Food additives	Chemicals in society	Analyzes/Evaluates



Science

Code	Link B	Link A	Verb
166	Food chain	Ecology	Describes/Explains
080	Food energy pyramid	Biochemistry	
463	Food webs	Cycles	Identifies
167		Ecology	Describes/Explains
168	Fossil fuels		
241	Fossils	Energy/resources	
157	Fossils/rocks	Earth history	
259	Fractional distillation	Fuels	
404	Frequency—hertz	Sound	
183	Friction	Electricity	
251		Force	
438	Fronts	Weather/climate	
312	Fungi	Kingdoms	
481		Organisms	Identifies
201	Fuse	Electricity—measurement	Describes/Explains
278	Fusion/vaporization	Heat	
422	Galaxies	Universe	
202	Galvanometer	Electricity—measurement	
242	Gases	Energy/resources	
266	Genes	Genetics	
267	Genotype/phenotype		
243	Geothermal	Energy/resources	
094	Glucose	Carbon/organic chemistry	
144	Gravity	Earth	
252		Force	
439	Greenhouse effect	Weather/climate	
184	Ground	Electricity	
169	Habitats	Ecology	
405	Hearing	Sound	
294	Hemoglobin	Human/animal	
170	Herbivores/omnivores/carnivores	Ecology	
107	Homeostasis	Cells	
295		Human/animal	
296	Hormones		
319	Human eye	Lenses	
457	Hydrocarbons	Compounds—organic	Identifies
095	Hydrocarbons—derivatives	Carbon/organic chemistry	Describes/Explains
096	Hydrocarbons—saturated/unsaturated		
192	Hydroelectric	Electricity—generating	
297	Immune system	Human/animal	
009	Impact statements	Environmental issues	Analyzes/Evaluates
032	Implications—economic	Science technology	
033	Implications—political		
034	Implications—social		
193	Incandescent	Electricity—generating	Describes/Explains
327		Light	



Science

Code	Link B	Link A	Verb
446	Inclined planes—edges/screws	Work	
253	Inertia	Force	
018	Inferences	Experiments	Analyzes/Evaluates
499	Information processing	Computers	Uses
279	Infrared	Heat	Describes/Explains
268	Inheritance	Genetics	
121	Inhibitors	Chemical reactions	
482	Insects	Organisms	Identifies
280	Insulation	Heat	Describes/Explains
260	Internal/external combustion	Fuels	
224	Ionic bonds	Electrons	
056	Ions	Acids/bases	
097	Isomers	Carbon/organic chemistry	
440	Jet stream	Weather/climate	
233	Kinetic/potential	Energy	
038	Kingdom, phylum, etc.	Classification schemes	Applies/Uses
328	Lasers	Light	Describes/Explains
145	Latitude—temperature zones	Earth	
234	Law of conservation	Energy	
352	Laws	Motion	
447	Levers	Work	
369	Life cycle	Organisms	
423	Light year	Universe	
185	Lightning	Electricity	
019	Limitations	Experiments	Analyzes/Evaluates
098	Lipids	Carbon/organic chemistry	Describes/Explains
497	Liquids/solids	Volume	Measures
146	Longitude—time zones	Earth	Describes/Explains
424	Lunar cycles	Universe	
425	Lunar phases		
217	Magnetic fields/force	Electromagnetism	
218	Magnetic poles		
219	Magnets		
225		Electrons	
298	Maintenance/management	Human/animal	
064	Mass	Atoms	
254		Force	
500	Mathematical applications	Computers	Uses
133	Matter	Conservation	Describes/Explains
235	Mechanical	Energy	
010	Media information	Environmental issues	Analyzes/Evaluates
299	Metabolism	Human/animal	Describes/Explains
373	Metallic luster	Periodic table	
374	Metalloids		
147	Mineral cycle	Earth	
134	Minerals	Conservation	



Science

Code	Link B	Link A	Verb
269	Mitosis/meiosis	Genetics	
122	Mole	Chemical reactions	
236	Momentum	Energy	
313	Monera	Kingdoms	
426	Moons	Universe	
340	Motion/inertia	Matter	
194	Motors	Electricity—generating	
148	Movement, e.g., earthquakes	Earth	
005	MSG	Chemicals in society	Analyzes/Evaluates
300	Muscular system	Human/animal	Describes/Explains
270	Mutations	Genetics	
469	Names/symbols	Elements	Identifies
149	Natural resources	Earth	Describes/Explains
301	Nervous system	Human/animal	
057	Neutralization/salts	Acids/bases	
171	Niches	Ecology	
380	Nitrogen cycle	Plants	
406	Noise/acoustics	Sound	
375	Non-metals	Periodic table	
244	Nuclear	Energy/resources	
065	Number	Atoms	
047	Observation—direct/indirect	Scientific methods	Applies/Uses
203	Ohm's law	Electricity—measurement	Describes/Explains
329	Opaque	Light	
467	Operational	Definitions	Identifies
020	Operational definitions	Experiments	Analyzes/Evaluates
302	Organs/transplants	Human/animal	Describes/Explains
108	Osmosis	Cells	
407	Overtones/harmonies	Sound	
213	Oxidation/reduction	Electrochemical reactions	
381	Oxygen/carbon dioxide cycle	Plants	
441	Ozone layer	Weather/climate	
186	Parallel/series circuits	Electricity	
109	Parts/functions	Cells	
382		Plants	
058	pH	Acids/bases	
341	Phases/states	Matter	
473			Identifies
081	Phosphate groups	Biochemistry	Describes/Explains
330	Photoelectric	Light	
331	Photons		
082	Photosynthesis	Biochemistry	
383		Plants	
110	Photosynthesis/ATP	Cells	
474	Physical properties	Matter	Identifies
127	Pigmentation	Color	Describes/Explains



Science

Code	Link B	Link A	Verb
408	Pitch/frequency	Sound	
427	Planets	Universe	
314	Plantae	Kingdoms	
483	Plants	Organisms	Identifies
303	Plasma	Human/animal	Describes/Explains
391	Polar/non-polar	Solutions	
332	Polarization	Light	
384	Pollen	Plants	
011	Pollution	Environmental issues	Analyzes/Evaluates
099	Polyatomic ion	Carbon/organic chemistry	Describes/Explains
172	Population	Ecology	
237	Power	Energy	
442	Precipitation	Weather/climate	
173	Predators	Ecology	
048	Predictions	Scientific methods	Applies/Uses
255	Pressure	Force	Describes/Explains
049	Problem identification	Scientific methods	Applies/Uses
501	Problem solving	Computers	Uses
035	Products, e.g., petroleum/textiles	Science technology	Analyzes/Evaluates
353	Projectile	Motion	Describes/Explains
111	Prokaryotes	Cells	
385	Propagation	Plants	
342	Properties	Matter	
376		Periodic table	
071	Protein production	Bacteria	
083	Protein synthesis	Biochemistry	
100	Proteins	Carbon/organic chemistry	
315	Protista	Kingdoms	
386	Pruning	Plants	
448	Pulleys	Work	
271	Punnett square	Genetics	
409	Quality	Sound	
021	Questions	Experiments	Analyzes/Evaluates
281	Radiation	Heat	Describes/Explains
128	Rainbow	Color	
123	Reactants	Chemical reactions	
028	Recovery	Natural resources	Analyzes/Evaluates
410	Reflection/interference	Sound	Describes/Explains
333	Refraction	Light	
443	Relative humidity	Weather/climate	
029	Renewable/nonrenewable	Natural resources	Analyzes/Evaluates
022	Replications	Experiments	
370	Reproduction	Organisms	Describes/Explains
304	Reproductive system	Human/animal	
486	Research	Questions	Identifies
204	Resistance	Electricity—measurement	Describes/Explains



Science

Code	Link B	Link A	Verb
072	Resistance to drugs	Bacteria	
411	Resonance	Sound	
360	Resources	Oceans	
112	Respiration	Cells	
305	Respiratory system	Human/animal	
412	Retraction/diffraction	Sound	
150	Rock cycles	Earth	
129	Rods	Color	
041	Safety	Laboratory techniques	Applies/Uses
023	Samples	Experiments	Analyzes/Evaluates
392	Saturated/unsaturated	Solutions	Describes/Explains
151	Shape	Earth	
187	Short circuit	Electricity	
084	Simple sugar	Biochemistry	
306	Skeletal system	Human/animal	
307	Skin		
036	Societal influences	Science technology	Analyzes/Evaluates
135	Soil	Conservation	Describes/Explains
195	Solar	Electricity—generating	
245		Energy/resources	
428	Solar system	Universe	
393	Soluble/insoluble	Solutions	
394	Solute		
395	Solvent		
024	Sources of errors	Experiments	Analyzes/Evaluates
130	Spectrum	Color	Describes/Explains
334	Speed	Light	
354		Motion	
413		Sound	
429	Stars	Universe	
188	Static	Electricity	
196	Steam, e.g., nuclear	Electricity—generating	
066	Structure	Atoms	
343		Matter	
475			Identifies
361	Structure, e.g., floor, reefs	Oceans	Describes/Explains
344	Substance	Matter	
174	Succession	Ecology	
458	Suffixes	Compounds—organic	Identifies
430	Sun	Universe	Describes/Explains
158	Superposition	Earth history	
175	Survival mechanisms	Ecology	
282	Temperature	Heat	
387	Temperature—role of	Plants	
101	Tetrahedron	Carbon/organic chemistry	
238	Theory of relativity	Energy	



Science

Code	Link B	Link A	Verb
239	Thermal		
362	Tides	Oceans	
308	Tissues	Human/animal	
197	Transformers	Electricity—generating	
189	Transistor	Electricity	
377	Transition metals	Periodic table	
335	Translucent/transparent	Light	
113	Transport—active/passive	Cells	
210	Types—cells, batteries, electrodes	Electrochemical energy	
336	Ultraviolet	Light	
345	Uses	Matter	
476			Identifies
030	Utilization	Natural resources	Analyzes/Evaluates
190	Vacuum tube	Electricity	Describes/Explains
025	Variables	Experiments	Analyzes/Evaluates
355	Velocity	Motion	Describes/Explains
484	Vertebrates/invertebrates	Organisms	Identifies
356	Vibrations/waves	Motion	Describes/Explains
485	Viruses	Organisms	Identifies
102	Vitamins	Carbon/organic chemistry	Describes/Explains
006		Chemicals in society	Analyzes/Evaluates
414	Vocal cords	Sound	Describes/Explains
205	Voltage	Electricity—measurement	
012	Waste management	Environmental issues	Analyzes/Evaluates
136	Water	Conservation	Describes/Explains
152		Earth	
388		Plants	
363	Water cycle	Oceans	
464	Water/climate	Cycles	Identifies
246	Water/tides	Energy/resources	Describes/Explains
364	Waves	Oceans	
415	Waves—pitch frequency	Sound	
465	Weather	Cycles	Identifies
067	Weight	Atoms	Describes/Explains
256		Force	
309	Weight gain/loss	Human/animal	
137	Wildlife	Conservation	
247	Wind	Energy/resources	
444		Weather/climate	
257	Work	Force	
272	Zygote	Genetics	

Appendix A

Language Arts :

Sub-Categories



Language Concepts

Code	Verb	Link A	Link B
013	Applies/Uses	Definitions	...
014		Figures of speech	...
020		Study habits/methods	...
021			Previewing
022			Prior knowledge
023	Composes/Edits		Skimming
024			Test-taking
073		Outlines	...
074		Paragraphs	...
087		Reports/essays	...
099	Describes/Explains	Sentences	...
150		Grammar system	...
151			Usage
152		Language	...
153			Families
154	Language situations		Origin/development
155			...
156			Audience
157			Purpose
158			Origin/development
159	New words		...
160			Assumptions/biases
161			Emotional tone
162			Euphemisms
163			Irony/satire
164	Purpose/strategy		Propaganda techniques
165			Stereotypes
166			Word groups
173	Evaluates	Information—oral	Non-print media
192	Identifies	Function of words	...
193			Adjectives/adverbs
194			Direct/indirect object
195			Nouns/verbs
196			Phrases/clauses
197	Uses		Prepositions/conjunctions
198			Subject/predicate
271		Dictionary	...
272		Library resources	...
273			Almanacs/yearbooks
274			Atlases
275			Card catalogs
276			Encyclopedia



Language Concepts

Code	Verb	Link A	Link B
277			Guides
278		Text resources	...
279			Glossaries
280			Indexes
281			Table of contents
282		Thesaurus	...



Listening

Code	Verb	Link A	Link B		
001	Adapts	Diction/structure	...		
002			Audience		
003			Purpose		
004			Situation		
005			Listening		
009	Appreciates	Strategy	...		
011		Style	Cultural differences		
025		Author's style/approach	...		
026			Characters		
027			Imagery		
028	Incidents/details				
029	Language usage				
030			Mood/tone		
031			Organization/structure		
032			Plot		
033			Sequence		
035			Attends	Directions/task	...
036			Nonverbal cues	...	
037			Verbal cues	...	
038			Collects/Organizes	Information—oral/written	...
105			Composes/Edits	Sentences	Fragments--w/o
121			Comprehends	Information—oral	...
122			Assumptions/biases		
123			Cause/effect relationships		
124			Character traits		
125			Comparisons/contrasts		
126			Conclusions		
127			Context		
128			Main idea		
129			Purpose		
130			Rationale		
131			Varied types		
167			Evaluates	...	
168					Adequacy/sufficiency
169					Appropriateness
170					Clarity
171					Conclusion/solutions
172	Fact/opinion				
173	Non-print media				
174	Propaganda techniques				
175	Reality/fantasy				
176	Relationship of ideas				



Listening

Code	Verb	Link A	Link B
177			Relevant/irrelevant
178			Sources
179			Validity
199	Identifies		...
200			Assumptions/biases
201			Context
202			Dialects
203			Emotional tone
204			Euphemisms
205			Explicit/implicit
206			Irony/satire
207			Key words/phrases
208			Main idea
209			Mood/tone
210			Outcomes/solutions
211			Prior knowledge
212			Propaganda techniques
213			Stereotypes
230		Point of view	First/third person
231		Purpose/strategy	...
236	Infers/Predicts	Information—oral	...
237			Assumptions/biases
238			Cause/effect relationships
239			Character traits
240			Comparisons/contrasts
241			Context
242			Details
243			Main idea
244			Outcomes/solutions
245			Purpose
246			Rationale



Reading

Code	Verb	Link A	Link B
006	Adapts	Strategy	Reading
025	Appreciates	Author's style/approach	...
026			Characters
027			Imagery
028			Incidents/details
029			Language usage
030			Mood/tone
031			Organization/structure
032			Plot
033			Sequence
034			Setting
038	Collects/Organizes	Information—oral/written	...
042			Notes
046			Reading
132	Comprehends	Information—written	...
133			Assumptions/biases
134			Cause/effect relationships
135			Character traits
136			Charts/tables/graphs
137			Comparisons/contrasts
138			Conclusions
139			Context
140			Evaluations/critiques
141			Main idea
142			Mood
143			Persuasive text
144			Plot
145			Purpose
146			Rationale
147			Sequence
148			Setting
149			Summaries
180	Evaluates		...
181			Adequacy/sufficiency
182			Appropriateness
183			Clarity
184			Conclusion/solutions
185			Fact/opinion
186			Propaganda techniques
187			Reality/fantasy
188			Relationship of ideas
189			Relevant/irrelevant



Reading

Code	Verb	Link A	Link B
190			Sources
191			Validity
214	Identifies		...
215			Abbreviations
216			Assumptions/biases
217			Context
218			Dialects
219			Emotional tone
220			Euphemisms
221			Explicit/implicit
222			Fiction/non-fiction
223			Irony/satire
224			Key words/phrases
225			Main idea
226			Mood/tone
227			Outcomes/solutions
228			Propaganda techniques
229			Stereotypes
230		Point of view	First/third person
231		Purpose/strategy	...
233			Reading
247	Infers/Predicts	Information—written	...
248			Assumptions/biases
249			Cause/effect relationships
250			Character traits
251			Comparisons/contrasts
252			Context
253			Details
254			Main idea
255			Mood/tone
256			Outcomes/solutions
257			Plot/setting
258			Purpose
259			Rationale
260			Sequence
271	Uses	Dictionary	...
272		Library resources	...
273			Almanacs/yearbooks
275			Card catalogs
276			Encyclopedia
277			Guides
278		Text resources	...



Reading

Code	Verb	Link A	Link B
279			Glossaries
280			Indexes
281			Table of contents
282		Thesaurus	...



Speaking

Code	Verb	Link A	Link B
001	Adapts	Diction/structure	...
002			Audience
003			Purpose
004			Situation
007			Speaking
009		Strategy Style	...
010			Audience
011			Cultural differences
012			Purpose
013			...
014	Applies/Uses	Definitions Figures of speech	...
015			Hyperbole
016			Idiomatic expressions
017			Metaphor
019			Simile
038	Collects/Organizes	Information—oral/written	...
040			Discussions
042			Notes
044			Outlines
045			Personal experiences
052	Composes/Edits	Drafts—oral/written	...
053			Consistency
054			Extemporaneous
055			Originality
056			Sequence
057		Notes Oral presentations	Tone
069			...
071			...
072			Structure
073			...
099		Outlines Sentences	...
105			Fragments—w/o
109			Order of words
113			Run-on—w/o
115			Subject/verb agreement
231	Identifies	Purpose/strategy	...
234			Speaking
261	Presents	Formal speech	...
262			Expository
263			Persuasive
264			...
265			Discussion



Speaking

Code	Verb	Link A	Link B
266			Information requests
267			Information supplying
268			Interpretation
269			Interview
270			Persuasive



Writing

Code	Verb	Link A	Link B
001	Adapts	Diction/structure	...
008		Strategy	Writing
009		Style	...
010			Audience
011			Cultural differences
012			Purpose
013	Applies/Uses	Definitions	...
014		Figures of speech	...
015			Hyperbole
016			Idiomatic expressions
017			Metaphor
018			Personification
019			Simile
038	Collects/Organizes	Information—oral/written	...
039			Classifications
040			Discussions
041			Library resources
042			Notes
043			Observations
044			Outlines
045			Personal experiences
047			Research—formal
048	Composes/Edits	Agenda	...
049		Audio-visual aids	...
050			Graphs
051		Bibliographies	...
052		Drafts—oral/written	...
053			Consistency
054			Extemporaneous
055			Originality
056			Sequence
057			Tone
058		Forms/documents	...
059			Classified ads
060			College applications
061			Financial applications
062			Job applications
063			Resumes
064			Social Security applications
065			W-4 forms
066			Work permits
067		Journals/diaries	...



Writing

Code	Verb	Link A	Link B
068			Personal recollections
069		Notes	...
070			Lecture
073		Outlines	...
074		Paragraphs	...
075			Cause/effect relationships
076			Coherence
077			Details
078			Sequence
079			Topic sentences/main idea
080			Transitions
081		Poetry	...
082			Form
083			Imagery
084			Rhyme
085			Rhythm
086			Tone
087		Reports/essays	...
088			Editorials/opinions
089			Evaluations/critiques
090			Expositions
091			Information requests
092			Information supplying
093			Narratives
094			Persuasive text
095			Proofs/revisions
096			Research—formal
097			Short stories/plays
098			Summaries
099		Sentences	...
100			Adjectives
101			Adverbs
102			Capitalization
103			Completeness
104			Direct/indirect object
105			Fragments—w/o
106			Irregular expressions—w/o
107			Modifiers
108			Nouns
109			Order of words
110			Predicates
111			Pronouns



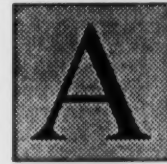
Writing

Code	Verb	Link A	Link B
112			Punctuation
113			Run-on—w/o
114			Spelling
115			Subject/verb agreement
116			Subjects
117			Verbs
118		Social communications/letters	...
119			Business
120			Personal
231	Identifies	Purpose/strategy	...
235			Writing
271	Uses	Dictionary	...
272		Library resources	...
273			Almanacs/yearbooks
274			Atlases
275			Card catalogs
276			Encyclopedia
277			Guides
278		Text resources	...
279			Glossaries
280			Indexes
281			Table of contents
282		Thesaurus	...



Language Concepts

Code	Link A	Link B	Verb
013	Definitions	...	Applies/Uses
271	Dictionary	...	Uses
014	Figures of speech	...	Applies/Uses
192	Function of words	...	Identifies
193		Adjectives/adverbs	
194		Direct/indirect object	
195		Nouns/verbs	
196		Phrases/clauses	
197		Prepositions/conjunctions	
198		Subject/predicate	
150	Grammar system	...	Describes/Explains
151		Usage	
173	Information—oral	Non-print media	Evaluates
152	Language	...	Describes/Explains
153		Families	
154		Origin/development	
155	Language situations	...	
156		Audience	
157		Purpose	
272	Library resources	...	Uses
273		Almanacs/yearbooks	
274		Atlases	
275		Card catalogs	
276		Encyclopedia	
277		Guides	
158	New words	Origin/development	Describes/Explains
073	Outlines	...	Composes/Edits
074	Paragraphs	...	
159	Perceptual effects	...	Describes/Explains
160		Assumptions/biases	
161		Emotional tone	
162		Euphemisms	
163		Irony/satire	
164		Propaganda techniques	
165		Stereotypes	
166	Purpose/strategy	Word groups	
087	Reports/essays	...	Composes/Edits
099	Sentences	...	
020	Study habits/methods	...	Applies/Uses
021		Previewing	
022		Prior knowledge	
023		Skimming	



Language Concepts

Code	Link A	Link B	Verb
024		Test-taking	
278	Text resources	...	Uses
279		Glossaries	
280		Indexes	
281		Table of contents	
282	Thesaurus	...	



Listening

Code	Link A	Link B	Verb
025	Author's style/approach	...	Appreciates
026		Characters	
027		Imagery	
028		Incidents/details	
029		Language usage	
030		Mood/tone	
031		Organization/structure	
032		Plot	
033		Sequence	
001	Diction/structure	...	Adapts
002		Audience	
003		Purpose	
004		Situation	
035	Directions/task	...	Attends
121	Information—oral	...	Comprehends
167		...	Evaluates
199		...	Identifies
236		...	Infers/Predicts
168		Adequacy/sufficiency	Evaluates
169		Appropriateness	
122		Assumptions/biases	Comprehends
200			Identifies
237			Infers/Predicts
123		Cause/effect relationships	Comprehends
238			Infers/Predicts
124		Character traits	Comprehends
239			Infers/Predicts
170		Clarity	Evaluates
125		Comparisons/contrasts	Comprehends
240			Infers/Predicts
171		Conclusion/solutions	Evaluates
126		Conclusions	Comprehends
127		Context	
201			Identifies
241			Infers/Predicts
242		Details	
202		Dialects	Identifies
203		Emotional tone	
204		Euphemisms	
205		Explicit/implicit	
172		Fact/opinion	Evaluates
206		Irony/satire	Identifies



Listening

Code	Link A	Link B	Verb
207		Key words/phrases	
128		Main idea	Comprehends
208			Identifies
243			Infers/Predicts
209		Mood/tone	Identifies
173		Non-print media	Evaluates
210		Outcomes/solutions	Identifies
244			Infers/Predicts
211		Prior knowledge	Identifies
174		Propaganda techniques	Evaluates
212			Identifies
129		Purpose	Comprehends
245			Infers/Predicts
130		Rationale	Comprehends
246			Infers/Predicts
175		Reality/fantasy	Evaluates
176		Relationship of ideas	
177		Relevant/irrelevant	
178		Sources	
213		Stereotypes	Identifies
179		Validity	Evaluates
131		Varied types	Comprehends
038	Information—oral/written	...	Collects/Organizes
036	Nonverbal cues	...	Attends
230	Point of view	First/third person	Identifies
231	Purpose/strategy	...	
232		Listening	
005	Strategy		Adapts
009	Style	...	
011		Cultural differences	
037	Verbal cues	...	Attends



Reading

Code	Link A	Link B	Verb
025	Author's style/approach	...	Appreciates
026		Characters	
027		Imagery	
028		Incidents/details	
029		Language usage	
030		Mood/tone	
031		Organization/structure	
032		Plot	
033		Sequence	
034		Setting	
271	Dictionary	...	Uses
038	Information—oral/written	...	Collects/Organizes
042		Notes	
046		Reading	
132	Information—written	...	Comprehends
180		...	Evaluates
214		...	Identifies
247		...	Infers/Predicts
215		Abbreviations	Identifies
181		Adequacy/sufficiency	Evaluates
182		Appropriateness	
133		Assumptions/biases	Comprehends
216			Identifies
248			Infers/Predicts
134		Cause/effect relationships	Comprehends
249			Infers/Predicts
135		Character traits	Comprehends
250			Infers/Predicts
136		Charts/tables/graphs	Comprehends
183		Clarity	Evaluates
137		Comparisons/contrasts	Comprehends
251			Infers/Predicts
184		Conclusion/solutions	Evaluates
138		Conclusions	Comprehends
139		Context	
217			Identifies
252			Infers/Predicts
253		Details	
218		Dialects	Identifies
219		Emotional tone	
220		Euphemisms	
140		Evaluations/critiques	Comprehends



Reading

Code	Link A	Link B	Verb
221		Explicit/implicit	Identifies
185		Fact/opinion	Evaluates
222		Fiction/non-fiction	Identifies
223		Irony/satire	
224		Key words/phrases	
141		Main idea	Comprehends
225			Identifies
254			Infers/Predicts
142		Mood	Comprehends
226		Mood/tone	Identifies
255			Infers/Predicts
227		Outcomes/solutions	Identifies
256			Infers/Predicts
143		Persuasive text	Comprehends
144		Plot	
257		Plot/setting	Infers/Predicts
186		Propaganda techniques	Evaluates
228			Identifies
145		Purpose	Comprehends
258			Infers/Predicts
146		Rationale	Comprehends
259			Infers/Predicts
187		Reality/fantasy	Evaluates
188		Relationship of ideas	
189		Relevant/irrelevant	
147		Sequence	Comprehends
260			Infers/Predicts
148		Setting	Comprehends
190		Sources	Evaluates
229		Stereotypes	Identifies
149		Summaries	Comprehends
191		Validity	Evaluates
272	Library resources	...	Uses
273		Almanacs/yearbooks	
275		Card catalogs	
276		Encyclopedia	
277		Guides	
230	Point of view	First/third person	Identifies
231	Purpose/strategy	...	
233		Reading	
006	Strategy		Adapts
278	Text resources	...	Uses



Reading

Code	Link A	Link B	Verb
279		Glossaries	
280		Indexes	
281		Table of contents	
282	Thesaurus	...	



Speaking

Code	Link A	Link B	Verb
013	Definitions	...	Applies/Uses
001	Diction/structure	...	Adapts
002		Audience	
003		Purpose	
004		Situation	
052	Drafts—oral/written	...	Composes/Edits
053		Consistency	
054		Extemporaneous	
055		Originality	
056		Sequence	
057		Tone	
014	Figures of speech	...	Applies/Uses
015		Hyperbole	
016		Idiomatic expressions	
017		Metaphor	
019		Simile	
261	Formal speech	...	Presents
262		Expository	
263		Persuasive	
264	Informal speech	...	
265		Discussion	
266		Information requests	
267		Information supplying	
268		Interpretation	
269		Interview	
270		Persuasive	
038	Information—oral/written	...	Collects/Organizes
040		Discussions	
042		Notes	
044		Outlines	
045		Personal experiences	
069	Notes	...	Composes/Edits
071	Oral presentations	...	
072		Structure	
073	Outlines	...	
231	Purpose/strategy	...	Identifies
234		Speaking	
099	Sentences	...	Composes/Edits
105		Fragments—w/o	
109		Order of words	
113		Run-on—w/o	
115		Subject/verb agreement	



Speaking

Code	Link A	Link B	Verb
007	Strategy	Speaking	Adapts
009	Style	...	
010		Audience	
011		Cultural differences	
012		Purpose	



Writing

Code	Link A	Link B	Verb
048	Agenda	...	Composes/Edits
049	Audio-visual aids	...	
050		Graphs	
051	Bibliographies	...	
013	Definitions	...	Applies/Uses
001	Diction/structure	...	Adapts
271	Dictionary	...	Uses
052	Drafts—oral/written	...	Composes/Edits
053		Consistency	
054		Extemporaneous	
055		Originality	
056		Sequence	
057		Tone	
014	Figures of speech	...	Applies/Uses
015		Hyperbole	
016		Idiomatic expressions	
017		Metaphor	
018		Personification	
019		Simile	
058	Forms/documents	...	Composes/Edits
059		Classified ads	
060		College applications	
061		Financial applications	
062		Job applications	
063		Resumes	
064		Social Security applications	
065		W-4 forms	
066		Work permits	
038	Information—oral/written	...	Collects/Organizes
039		Classifications	
040		Discussions	
041		Library resources	
042		Notes	
043		Observations	
044		Outlines	
045		Personal experiences	
047		Research—formal	
067	Journals/diaries	...	Composes/Edits
068		Personal recollections	
272	Library resources	...	Uses
273		Almanacs/yearbooks	
274		Atlases	



Writing

Code	Link A	Link B	Verb
275		Card catalogs	
276		Encyclopedia	
277		Guides	
069	Notes	...	Composes/Edits
070		Lecture	
073	Outlines	...	
074	Paragraphs	...	
075		Cause/effect relationships	
076		Coherence	
077		Details	
078		Sequence	
079		Topic sentences/main idea	
080		Transitions	
081	Poetry	...	
082		Form	
083		Imagery	
084		Rhyme	
085		Rhythm	
086		Tone	
231	Purpose/strategy	...	Identifies
235		Writing	
087	Reports/essays	...	Composes/Edits
088		Editorials/opinions	
089		Evaluations/critiques	
090		Expositions	
091		Information requests	
092		Information supplying	
093		Narratives	
094		Persuasive text	
095		Proofs/revisions	
096		Research—formal	
097		Short stories/plays	
098		Summaries	
099	Sentences	...	
100		Adjectives	
101		Adverbs	
102		Capitalization	
103		Completeness	
104		Direct/indirect object	
105		Fragments—w/o	
106		Irregular expressions—w/o	
107		Modifiers	



Writing

Code	Link A	Link B	Verb
108		Nouns	
109		Order of words	
110		Predicates	
111		Pronouns	
112		Punctuation	
113		Run-on—w/o	
114		Spelling	
115		Subject/verb agreement	
116		Subjects	
117		Verbs	
118	Social communications/letters	...	
119		Business	
120		Personal	
008	Strategy	Writing	Adapts
009	Style	...	
010		Audience	
011		Cultural differences	
012		Purpose	
278	Text resources	...	Uses
279		Glossaries	
280		Indexes	
281		Table of contents	
282	Thesaurus	...	



Language Concepts

Code	Link B	Link A	Verb
013	...	Definitions	Applies/Uses
271	...	Dictionary	Uses
014	...	Figures of speech	Applies/Uses
192	...	Function of words	Identifies
150	...	Grammar system	Describes/Explains
152	...	Language	
155	...	Language situations	
272	...	Library resources	Uses
073	...	Outlines	Composes/Edits
074	...	Paragraphs	
159	...	Perceptual effects	Describes/Explains
087	...	Reports/essays	Composes/Edits
099	...	Sentences	
020	...	Study habits/methods	Applies/Uses
278	...	Text resources	Uses
282	...	Thesaurus	
193	Adjectives/adverbs	Function of words	Identifies
273	Almanacs/yearbooks	Library resources	Uses
160	Assumptions/biases	Perceptual effects	Describes/Explains
274	Atlases	Library resources	Uses
156	Audience	Language situations	Describes/Explains
275	Card catalogs	Library resources	Uses
194	Direct/indirect object	Function of words	Identifies
161	Emotional tone	Perceptual effects	Describes/Explains
276	Encyclopedia	Library resources	Uses
162	Euphemisms	Perceptual effects	Describes/Explains
153	Families	Language	
279	Glossaries	Text resources	Uses
277	Guides	Library resources	
280	Indexes	Text resources	
163	Irony/satire	Perceptual effects	Describes/Explains
173	Non-print media	Information—oral	Evaluates
195	Nouns/verbs	Function of words	Identifies
154	Origin/development	Language	Describes/Explains
158		New words	
196	Phrases/clauses	Function of words	Identifies
197	Prepositions/conjunctions		
021	Previewing	Study habits/methods	Applies/Uses
022	Prior knowledge		
164	Propaganda techniques	Perceptual effects	Describes/Explains
157	Purpose	Language situations	
023	Skimming	Study habits/methods	Applies/Uses



Language Concepts

Code	Link B	Link A	Verb
165	Stereotypes	Perceptual effects	Describes/Explains
198	Subject/predicate	Function of words	Identifies
281	Table of contents	Text resources	Uses
024	Test-taking	Study habits/methods	Applies/Uses
151	Usage	Grammar system	Describes/Explains
166	Word groups	Purpose/strategy	



Listening

Code	Link B	Link A	Verb
025	...	Author's style/approach	Appreciates
001	...	Diction/structure	Adapts
035	...	Directions/task	Attends
121	...	Information—oral	Comprehends
167	...		Evaluates
199	...		Identifies
236	...		Infers/Predicts
038	...	Information—oral/written	Collects/Organizes
036	...	Nonverbal cues	Attends
231	...	Purpose/strategy	Identifies
009	...	Style	Adapts
037	...	Verbal cues	Attends
168	Adequacy/sufficiency	Information—oral	Evaluates
169	Appropriateness		
122	Assumptions/biases		Comprehends
200			Identifies
237			Infers/Predicts
002	Audience	Diction/structure	Adapts
123	Cause/effect relationships	Information—oral	Comprehends
238			Infers/Predicts
124	Character traits		Comprehends
239			Infers/Predicts
026	Characters	Author's style/approach	Appreciates
170	Clarity	Information—oral	Evaluates
125	Comparisons/contrasts		Comprehends
240			Infers/Predicts
171	Conclusion/solutions		Evaluates
126	Conclusions		Comprehends
127	Context		
201			Identifies
241			Infers/Predicts
011	Cultural differences	Style	Adapts
242	Details	Information—oral	Infers/Predicts
202	Dialects		Identifies
203	Emotional tone		
204	Euphemisms		
205	Explicit/implicit		
172	Fact/opinion		Evaluates
230	First/third person	Point of view	Identifies
027	Imagery	Author's style/approach	Appreciates
028	Incidents/details		
206	Irony/satire	Information—oral	Identifies



Listening

Code	Link B	Link A	Verb
207	Key words/phrases		Appreciates
029	Language usage	Author's style/approach	Identifies
232	Listening	Purpose/strategy	Adapts
005		Strategy	Comprehends
128	Main idea	Information—oral	Identifies
208			Infers/Predicts
243			Appreciates
030	Mood/tone	Author's style/approach	Identifies
209		Information—oral	Evaluates
173	Non-print media		Appreciates
031	Organization/structure	Author's style/approach	Identifies
210	Outcomes/solutions	Information—oral	Infers/Predicts
244			Appreciates
032	Plot	Author's style/approach	Identifies
211	Prior knowledge	Information—oral	Evaluates
174	Propaganda techniques		Identifies
212			Adapts
003	Purpose	Diction/structure	Comprehends
129		Information—oral	Infers/Predicts
245			Comprehends
130	Rationale		Infers/Predicts
246			Evaluates
175	Reality/fantasy		
176	Relationship of ideas		
177	Relevant/irrelevant		
033	Sequence	Author's style/approach	Appreciates
004	Situation	Diction/structure	Adapts
178	Sources	Information—oral	Evaluates
213	Stereotypes		Identifies
179	Validity		Evaluates
131	Varied types		Comprehends



Reading

Code	Link B	Link A	Verb
025	...	Author's style/approach	Appreciates
271	...	Dictionary	Uses
038	...	Information—oral/written	Collects/Organizes
132	...	Information—written	Comprehends
180	...		Evaluates
214	...		Identifies
247	...		Infers/Predicts
272	...	Library resources	Uses
231	...	Purpose/strategy	Identifies
278	...	Text resources	Uses
282	...	Thesaurus	
215	Abbreviations	Information—written	Identifies
181	Adequacy/sufficiency		Evaluates
273	Almanacs/yearbooks	Library resources	Uses
182	Appropriateness	Information—written	Evaluates
133	Assumptions/biases		Comprehends
216			Identifies
248			Infers/Predicts
275	Card catalogs	Library resources	Uses
134	Cause/effect relationships	Information—written	Comprehends
249			Infers/Predicts
135	Character traits		Comprehends
250			Infers/Predicts
026	Characters	Author's style/approach	Appreciates
136	Charts/tables/graphs	Information—written	Comprehends
183	Clarity		Evaluates
137	Comparisons/contrasts		Comprehends
251			Infers/Predicts
184	Conclusion/solutions		Evaluates
138	Conclusions		Comprehends
139	Context		
217			Identifies
252			Infers/Predicts
253	Details		
218	Dialects		Identifies
219	Emotional tone		
276	Encyclopedia	Library resources	Uses
220	Euphemisms	Information—written	Identifies
140	Evaluations/critiques		Comprehends
221	Explicit/implicit		Identifies
185	Fact/opinion		Evaluates
222	Fiction/non-fiction		Identifies



Reading

Code	Link B	Link A	Verb
230	First/third person	Point of view	
279	Glossaries	Text resources	Uses
277	Guides	Library resources	
027	Imagery	Author's style/approach	Appreciates
028	Incidents/details		
280	Indexes	Text resources	Uses
223	Irony/satire	Information—written	Identifies
224	Key words/phrases		
029	Language usage	Author's style/approach	Appreciates
141	Main idea	Information—written	Comprehends
225			Identifies
254			Infers/Predicts
142	Mood		Comprehends
030	Mood/tone	Author's style/approach	Appreciates
226		Information—written	Identifies
255			Infers/Predicts
042	Notes	Information—oral/written	Collects/Organizes
031	Organization/structure	Author's style/approach	Appreciates
227	Outcomes/solutions	Information—written	Identifies
256			Infers/Predicts
143	Persuasive text		Comprehends
032	Plot	Author's style/approach	Appreciates
144		Information—written	Comprehends
257	Plot/setting		Infers/Predicts
186	Propaganda techniques		Evaluates
228			Identifies
145	Purpose		Comprehends
258			Infers/Predicts
146	Rationale		Comprehends
259			Infers/Predicts
046	Reading	Information—oral/written	Collects/Organizes
233		Purpose/strategy	Identifies
006		Strategy	Adapts
187	Reality/fantasy	Information—written	Evaluates
188	Relationship of ideas		
189	Relevant/irrelevant		
033	Sequence	Author's style/approach	Appreciates
147		Information—written	Comprehends
260			Infers/Predicts
034	Setting	Author's style/approach	Appreciates
148		Information—written	Comprehends
190	Sources		Evaluates



Reading

Code	Link B	Link A	Verb
229	Stereotypes		Identifies
149	Summaries		Comprehends
281	Table of contents	Text resources	Uses
191	Validity	Information—written	Evaluates



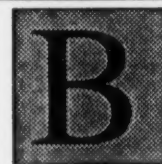
Speaking

Code	Link B	Link A	Verb
013	...	Definitions	Applies/Uses
001	...	Diction/structure	Adapts
052	...	Drafts—oral/written	Composes/Edits
014	...	Figures of speech	Applies/Uses
261	...	Formal speech	Presents
264	...	Informal speech	
038	...	Information—oral/written	Collects/Organizes
069	...	Notes	Composes/Edits
071	...	Oral presentations	
073	...	Outlines	
231	...	Purpose/strategy	Identifies
099	...	Sentences	Composes/Edits
009	...	Style	Adapts
002	Audience	Diction/structure	
010		Style	
053	Consistency	Drafts—oral/written	Composes/Edits
011	Cultural differences	Style	Adapts
265	Discussion	Informal speech	Presents
040	Discussions	Information—oral/written	Collects/Organizes
262	Expository	Formal speech	Presents
054	Extemporaneous	Drafts—oral/written	Composes/Edits
105	Fragments—w/o	Sentences	
015	Hyperbole	Figures of speech	Applies/Uses
016	Idiomatic expressions		
266	Information requests	Informal speech	Presents
267	Information supplying		
268	Interpretation		
269	Interview		
017	Metaphor	Figures of speech	Applies/Uses
042	Notes	Information—oral/written	Collects/Organizes
109	Order of words	Sentences	Composes/Edits
055	Originality	Drafts—oral/written	
044	Outlines	Information—oral/written	Collects/Organizes
045	Personal experiences		
263	Persuasive	Formal speech	Presents
270		Informal speech	
003	Purpose	Diction/structure	Adapts
012		Style	
113	Run-on—w/o	Sentences	Composes/Edits
056	Sequence	Drafts—oral/written	
019	Simile	Figures of speech	Applies/Uses
004	Situation	Diction/structure	Adapts



Speaking

Code	Link B	Link A	Verb
234	Speaking	Purpose/strategy	Identifies
007		Strategy	Adapts
072	Structure	Oral presentations	Composes/Edits
115	Subject/verb agreement	Sentences	
057	Tone	Drafts—oral/written	



Writing

Code	Link B	Link A	Verb
048 ...		Agenda	Composes/Edits
049 ...		Audio-visual aids	
051 ...		Bibliographies	
013 ...		Definitions	Applies/Uses
001 ...		Diction/structure	Adapts
271 ...		Dictionary	Uses
052 ...		Drafts—oral/written	Composes/Edits
014 ...		Figures of speech	Applies/Uses
058 ...		Forms/documents	Composes/Edits
038 ...		Information—oral/written	Collects/Organizes
067 ...		Journals/diaries	Composes/Edits
272 ...		Library resources	Uses
069 ...		Notes	Composes/Edits
073 ...		Outlines	
074 ...		Paragraphs	
081 ...		Poetry	
231 ...		Purpose/strategy	Identifies
087 ...		Reports/essays	Composes/Edits
099 ...		Sentences	
118 ...		Social communications/letters	
009 ...		Style	Adapts
278 ...		Text resources	Uses
282 ...		Thesaurus	
100	Adjectives	Sentences	Composes/Edits
101	Adverbs		
273	Almanacs/yearbooks	Library resources	Uses
274	Atlases		
010	Audience	Style	Adapts
119	Business	Social communications/letters	Composes/Edits
102	Capitalization	Sentences	
275	Card catalogs	Library resources	Uses
075	Cause/effect relationships	Paragraphs	Composes/Edits
039	Classifications	Information—oral/written	Collects/Organizes
059	Classified ads	Forms/documents	Composes/Edits
076	Coherence	Paragraphs	
060	College applications	Forms/documents	
103	Completeness	Sentences	
053	Consistency	Drafts—oral/written	
011	Cultural differences	Style	Adapts
077	Details	Paragraphs	Composes/Edits
104	Direct/indirect object	Sentences	
040	Discussions	Information—oral/written	Collects/Organizes



Writing

Code	Link B	Link A	Verb
088	Editorials/opinions	Reports/essays	Composes/Edits
276	Encyclopedia	Library resources	Uses
089	Evaluations/critiques	Reports/essays	Composes/Edits
090	Expositions		
054	Extemporaneous	Drafts—oral/written	
061	Financial applications	Forms/documents	
082	Form	Poetry	
105	Fragments—w/o	Sentences	
279	Glossaries	Text resources	Uses
050	Graphs	Audio-visual aids	Composes/Edits
277	Guides	Library resources	Uses
015	Hyperbole	Figures of speech	Applies/Uses
016	Idiomatic expressions		
083	Imagery	Poetry	Composes/Edits
280	Indexes	Text resources	Uses
091	Information requests	Reports/essays	Composes/Edits
092	Information supplying		
106	Irregular expressions—w/o	Sentences	
062	Job applications	Forms/documents	
070	Lecture	Notes	
041	Library resources	Information—oral/written	Collects/Organizes
017	Metaphor	Figures of speech	Applies/Uses
107	Modifiers	Sentences	Composes/Edits
093	Narratives	Reports/essays	
042	Notes	Information—oral/written	Collects/Organizes
108	Nouns	Sentences	Composes/Edits
043	Observations	Information—oral/written	Collects/Organizes
109	Order of words	Sentences	Composes/Edits
055	Originality	Drafts—oral/written	
044	Outlines	Information—oral/written	Collects/Organizes
120	Personal	Social communications/letters	Composes/Edits
045	Personal experiences	Information—oral/written	Collects/Organizes
068	Personal recollections	Journals/diaries	Composes/Edits
018	Personification	Figures of speech	Applies/Uses
094	Persuasive text	Reports/essays	Composes/Edits
110	Predicates	Sentences	
111	Pronouns		
095	Proofs/revisions	Reports/essays	
112	Punctuation	Sentences	
012	Purpose	Style	Adapts
047	Research—formal	Information—oral/written	Collects/Organizes
096		Reports/essays	Composes/Edits



Writing

Code	Link B	Link A	Verb
063	Resumes	Forms/documents	
084	Rhyme	Poetry	
085	Rhythm		
113	Run-on—w/o	Sentences	
056	Sequence	Drafts—oral/written	
078		Paragraphs	
097	Short stories/plays	Reports/essays	
019	Simile	Figures of speech	Applies/Uses
064	Social Security applications	Forms/documents	Composes/Edits
114	Spelling	Sentences	
115	Subject/verb agreement		
116	Subjects		
098	Summaries	Reports/essays	
281	Table of contents	Text resources	Uses
057	Tone	Drafts—oral/written	Composes/Edits
086		Poetry	
079	Topic sentences/main idea	Paragraphs	
080	Transitions		
117	Verbs	Sentences	
065	W-4 forms	Forms/documents	
066	Work permits		
235	Writing	Purpose/strategy	Identifies
008		Strategy	Adapts

Appendix B

Language Arts :

Multiple Use of Codes

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
001		•		•	•
002		•		•	
003		•		•	
004		•		•	
005		•			
006			•		
007				•	
008					•
009		•		•	•
010				•	•
011		•		•	•
012				•	•
013	•			•	•
014	•			•	•
015				•	•
016				•	•
017				•	•
018					•
019				•	•
020	•				
021	•				
022	•				
023	•				
024	•				
025		•	•		

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
026		•	•		
027		•	•		
028		•	•		
029		•	•		
030		•	•		
031		•	•		
032		•	•		
033		•	•		
034			•		
035		•			
036		•			
037		•			
038		•	•	•	•
039					•
040				•	•
041					•
042			•	•	•
043					•
044				•	•
045				•	•
046			•		
047					•
048					•
049					•
050					•

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
051					•
052				•	•
053				•	•
054				•	•
055				•	•
056				•	•
057				•	•
058					•
059					•
060					•
061					•
062					•
063					•
064					•
065					•
066					•
067					•
068					•
069				•	•
070					•
071				•	
072				•	
073	•			•	•
074	•				•
075					•

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
076					•
077					•
078					•
079					•
080					•
081					•
082					•
083					•
084					•
085					•
086					•
087	•				•
088					•
089					•
090					•
091					•
092					•
093					•
094					•
095					•
096					•
097					•
098					•
099	•			•	•
100					•

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
101					•
102					•
103					•
104					•
105				•	•
106					•
107					•
108					•
109				•	•
110					•
111					•
112					•
113				•	•
114					•
115				•	•
116					•
117					•
118					•
119					•
120					•
121		•			
122		•			
123		•			
124		•			
125		•			

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
126		•			
127		•			
128		•			
129		•			
130		•			
131		•			
132			•		
133			•		
134			•		
135			•		
136			•		
137			•		
138			•		
139			•		
140			•		
141			•		
142			•		
143			•		
144			•		
145			•		
146			•		
147			•		
148			•		
149			•		
150	•				

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
151	•				
152	•				
153	•				
154	•				
155	•				
156	•				
157	•				
158	•				
159	•				
160	•				
161	•				
162	•				
163	•				
164	•				
165	•				
166	•				
167		•			
168		•			
169		•			
170		•			
171		•			
172		•			
173	•	•			
174		•			
175		•			

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
176		•			
177		•			
178		•			
179		•			
180			•		
181			•		
182			•		
183			•		
184			•		
185			•		
186			•		
187			•		
188			•		
189			•		
190			•		
191			•		
192	•				
193	•				
194	•				
195	•				
196	•				
197	•				
198	•				
199		•			
200		•			

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
201		•			
202		•			
203		•			
204		•			
205		•			
206		•			
207		•			
208		•			
209		•			
210		•			
211		•			
212		•			
213		•			
214			•		
215			•		
216			•		
217			•		
218			•		
219			•		
220			•		
221			•		
222			•		
223			•		
224			•		
225			•		

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
226			•		
227			•		
228			•		
229			•		
230		•	•		
231		•	•	•	•
232		•			
233			•		
234				•	
235					•
236		•			
237		•			
238		•			
239		•			
240		•			
241		•			
242		•			
243		•			
244		•			
245		•			
246		•			
247			•		
248			•		
249			•		
250			•		

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
251			•		
252			•		
253			•		
254			•		
255			•		
256			•		
257			•		
258			•		
259			•		
260			•		
261				•	
262				•	
263				•	
264				•	
265				•	
266				•	
267				•	
268				•	
269				•	
270				•	
271	•		•		•
272	•		•		•
273	•		•		•
274	•				•
275	•		•		•

Multiple Use of Codes from Taxonomy

Code	Language Concepts	Listening	Reading	Speaking	Writing
276	•		•		•
277	•		•		•
278	•		•		•
279	•		•		•
280	•		•		•
281	•		•		•
282	•		•		•

THE BASIC/ESSENTIAL SKILLS TAXONOMY: A CODER'S GUIDE

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Preface

A Coder's Guide to the Basic Skills Taxonomy is a practical guide. It is designed to provide explanations and directions regarding the use of the Taxonomy.

Each section contains specific information regarding the Taxonomy. Coding Rules and Conventions provide a standardized approach to the use of the Taxonomy, especially in attempting to clarify semantic interpretations of words and phrases. As has often been observed, very few words can be freely substituted for another word without changing the sense. In coding curriculum materials though, it is necessary to identify as precisely as possible the intent of the writer, while at the same time using the context provided in the Taxonomy. It is hoped that the explanations and exercises provided in the Coder's Guide will assist coders in being more precise in coding curriculum materials from a variety of sources.

Introduction

The *Basic/Essential Skills Taxonomy* was developed as a tool for comparing curriculum materials that are presented in a variety of formats. Curriculum materials include, for example, state-approved skills and task lists and subject matter syllabi. Most people have heard of or used a taxonomy, which is a classification of objects or concepts. A taxonomy is helpful in delineating the organization of items or concepts within a given field and in illustrating the interrelationships among those items or concepts. Benjamin Bloom developed a taxonomy that he labeled an educational-logical-psychological classification system. The order of words in his classification system was determined by the principles receiving the most emphasis. Consequently, education is mentioned first in his listing. The Bloom taxonomy identifies three domains—cognitive, affective, and psychomotor. His taxonomy is not specific to a field of knowledge, but rather provides a means for evaluating curriculum materials across fields of knowledge. In contrast, the *Basic/Essential Skills Taxonomy* specifies four academic skill areas:

- Free Enterprise
- Language Arts
- Mathematics
- Science

The areas included in any listing of basic academic skills probably reflect the author's biases rather than an absolute set of skills that are fundamental to success in school or life. However, considerable support exists for any basic skills list to include the traditional 3 R's. In the *Basic/Essential Skills Taxonomy*, the 3 R's are included in two of the four academic skill areas. Reading and writing are included in **Language Arts**, and arithmetic is included in **Mathematics**. Because many educators and business leaders believe that knowledge of science and economic literacy should be included in any basic skills list in order for a person to be successful in a modern technological society, the

academic skill areas of **Science** and **Free Enterprise** are included in the Taxonomy. Many educators consider language arts to be the organizing basis for a broad spectrum of communication skills. Thus, communication skills are viewed as an integrated set of skills. This organization of **Language Arts** is used in the Taxonomy, but is used more as a matter of convenience than as a strong commitment to a preferred organization. For those analysts who prefer a subcategorization of language arts skills, the Taxonomy is available with **Language Arts** categorized as:

- Reading
- Writing
- Listening
- Speaking
- Language Concepts

The Taxonomy provides numeric codes so that a relational database program can be used to perform computer-assisted analyses of curriculum materials. The database is designed so that key words are linked to numeric codes. The key words, then, appear each time the corresponding code is entered. This makes verification much easier.

The purpose of the Coder's Guide is to present a set of practical guidelines for those persons responsible for assigning numeric codes to curriculum materials being analyzed. In addition, the Coder's Guide provides practice in coding through a series of exercises.

The Taxonomy

In developing the Taxonomy, every effort was made to keep it brief. The Taxonomy had to include sufficient information to be comprehensive, but not so much information as to limit its practical value. This principle of parsimony required constant attention. Ideas from subject matter specialists, validated listings from business and industry workers, and resource material from sources such as textbooks, standardized tests, and available curriculum materials were used in developing the Taxonomy. Each source had its own imperatives, but the desire to keep the Taxonomy within reasonable limits became the cornerstone criterion.

Also, the Taxonomy had to represent some standard. Basic skills lists contributed by eighteen states provided this standard. A compilation of these lists was used to ensure that the Taxonomy is more broadly based than a single list from a state or educational unit. Since the Taxonomy was developed from existing lists, there is no implication that the listing represents the universe of knowledge in the specified academic area. Rather, the skills are those included in the lists provided by the eighteen states. The standard, therefore, is drawn from a compilation of skills approved by policy makers in these states.

Validity refers to the extent to which an instrument measures what it purports to measure. Since the Taxonomy was developed with lists from eighteen states, one could presume that the Taxonomy has face validity, merely because the ideas used in the development were the lists themselves. Another way to establish the validity of the Taxonomy is to examine the extent to which each state's list can be coded. The goal was to be able to code at least 90% of the items included in each of the eighteen lists. The results of a sample of the studies completed are presented in Table I. The names of specific states are not provided because of agreements regarding disclosure of information.

TABLE I

**Percent of Total Basic Academic Skills Coded Using the
*Taxonomy of Basic/Essential Skills***

State	FE %	LA %	MA %	SC %
1	92	100	93	91
2	**	98	92	93
3	**	97	92	92
4	91	91	98	91
5	98	90	100	**
6	**	97	97	91
7	**	98	98	**
8	93	93	100	94
9	97	94	93	93

** Not coded

There is an increasing interest in accountability—that is, providing information about what students will be able to do once they have successfully completed a course of instruction. As a result, many educators place more emphasis on outcomes and precision in defining goals and objectives. The Taxonomy provides a set of key words and phrases that define the major ideas included in each of the academic skill areas and a clear indication of what the learner is expected to do or know. Generally, the lists used in the development of the Taxonomy reflected a commitment to mastery learning or some variant of competency-based education, but the formats of the lists varied. In some cases, it was not clear what the learner was expected to do that would indicate his or her mastery. This presented problems in developing the Verb Index because some lists are oriented toward application of knowledge, while others favor identification and labeling. As a

result, some key words used in the Verb Index are generic and, as such, are not precise indicators of what the learner is expected to do that would indicate mastery. For example, some of the academic skill areas include the verb **Understands**—the behavior the learner is expected to exhibit. While understanding is a category used in Bloom's taxonomy, it is not particularly satisfactory in an approach that seeks to identify clearly what behavior demonstrates competence or mastery.

Uses of the Taxonomy

Curriculum developers are on the threshold of applying the tenets of accountability and evaluation more thoroughly because of the order that is emerging in curriculum development. Numerous conceptual approaches to curriculum and program development exist, but often these approaches are based on philosophical premises that are, to some degree, incompatible. This renders integration into a single approach difficult or impossible and therefore minimizes accountability and evaluation. Since no single format for structuring a curriculum plan has emerged, it is essential to provide a means of comparing curriculum materials developed from various viewpoints. Then, policy makers can take into account a variety of philosophical perspectives. A method of making these comparisons is the cross-walk technique of the *Basic/Essential Skills Taxonomy*.

The *Basic/Essential Skills Taxonomy* can be used in curriculum development projects and in curriculum analysis projects where comparisons between syllabi are desired. The Taxonomy is also valuable in facilitating dialogue between subject matter experts, policy makers, business and industry representatives, parents, or other people who assist in curriculum development projects.

Analysis. The Taxonomy can be used to analyze curriculum materials presented in various formats (e.g., state-approved skills lists and subject matter syllabi). Used in this manner, the Taxonomy can aid in determining the extent of overlap in courses in a program or a series of courses.

Alignment. The Taxonomy can be used in aligning curriculum offerings of a program. This provides for the orderly progression through an identified set of skills or objectives involving one or more subject areas. Alignment procedures help determine the degree of reteaching that is desired and examine curriculum offerings for duplication of materials presented in various course areas, such as mathematics and science.

Development. The Taxonomy can be used in curriculum development projects. Basic skills to be mastered, either before taking a course or as outcomes of a course, are identified and agreed upon before instruction begins. When used to identify skills to be mastered prior to taking a course, the skills are referred to as enabling objectives. When used as an outcome measure for the course, the skills are referred to as expected outcomes or competencies.

Dialogue. The Taxonomy can also be useful in focusing dialogue about skills to be taught or in evaluating the level of mastery of the materials taught in a subject area. Discussions regarding the desired outcomes of education are imperative. Educational units must identify ways to assure that the desired outcomes of education are understood clearly. This way, duplication can be minimized. Educators can use the Taxonomy to assist in communicating with each other regarding the most efficient ways for delivering educational services.

Additionally, as schools move toward criterion-referenced testing, the Taxonomy can be used to identify skills targeted for examination. Criterion-referenced testing demands that the knowledge segments students are expected to learn are specified. The Taxonomy provides a vehicle for specifying these segments of knowledge.

The Coder's Guide

The *Coder's Guide* is a guide to the use of the Taxonomy in setting up a relational database for performing computer-assisted analyses of curriculum materials. It is designed to develop consistency among coders and make the use of the Taxonomy easier. The *Coder's Guide* includes an orientation to the Taxonomy, coding rules, some conventions that are essentially definitions, and some practice exercises. The *Coder's Guide* is divided into four sections:

The Starting Point provides an introduction to the organization of the Taxonomy.

Coding Rules guides entry to searching in the Taxonomy and identifies specific coding procedures.

Coding Conventions provides a common set of semantic interpretations.

Coding Exercises provides practice in applying decision rules to a variety of statements. Explanations are provided to assist in greater understanding of the Taxonomy.

The Starting Point

To use the Taxonomy in the most efficient manner, the coder should first become familiar with the organization of the Taxonomy. The academic skill areas included in the Taxonomy are presented in Figure 1. Courses or subject areas commonly associated with the academic skill areas are identified as useful courses for comparison.

Figure 1. Courses or Subjects Associated with Academic Skill Areas

<u>Academic Skill Area</u>	<u>Typical Courses or Subject Areas</u>
Free Enterprise	Entrepreneurship, Economics, Free Enterprise
Language Arts	Grammar, Expository Writing, Public Speaking, Literature
Mathematics	General Mathematics, Pre-algebra, Algebra I
Science	General Science, Earth Science, Life Science

In the Taxonomy, the four academic skill areas are indexed by key words and phrases. These key words and phrases result in three indexes being identified for each academic skill area: The Verb Index, Index A, and Index B.

The Verb Index is presented first because the Taxonomy was designed to be used with competency-based curriculum materials. If the source materials (e.g., textbooks and syllabi) are written with the expected behavioral outcome identified clearly, this index is the appropriate index to use.

Key words and phrases listed in Index A refer to *constructs*. A construct is a generalized idea or operation. It often can be further defined. Key words and phrases listed in Index B identify *concepts* that relate to the constructs identified in Index A, but usually are more precise in their meaning. For example, the construct **Fractions and Ratios** is a generalized idea and is found in Index A. The construct is further defined by the concept **Improper Fraction**, which is found in Index B.

The page number for each index by academic skill area is presented in Figure 2. Key words and phrases in each index are arranged alphabetically for easy reference.

Figure 2. Academic Skill Area Index

Free Enterprise	Verb Index	Index A	Index B	(page 10)
	Index A	Index B	Verb Index	(page 37)
	Index B	Index A	Verb Index	(page 64)
Language Arts	Verb Index	Index A	Index B	(page 13)
	Index A	Index B	Verb Index	(page 40)
	Index B	Index A	Verb Index	(page 67)
Mathematics	Verb Index	Index A	Index B	(page 20)
	Index A	Index B	Verb Index	(page 47)
	Index B	Index A	Verb Index	(page 74)
Science	Verb Index	Index A	Index B	(page 26)
	Index A	Index B	Verb Index	(page 53)
	Index B	Index A	Verb Index	(page 80)

Coding Rules

These Coding Rules are tailored to coding source material rather than to developing curricular materials.

1. *Determine the academic skill area to be analyzed first.* In some cases, source materials are thoroughly edited competency, skill or task lists; in other cases, the source materials are unedited syllabi or objectives from a course or text. Regardless, the academic skill area to be analyzed must be determined before coding begins.

2. *Assemble the source materials to be coded.*

3. *Select either Index A or Index B to search for the appropriate code to be assigned to an item.* Generally, it is best to review the source materials before deciding whether to use Index A or Index B. If the source materials (the syllabi or competency

lists) focus essentially on definitions, Index B is probably preferable.

If the source materials are not primarily definitional in nature, Index A should be used. Remember that a construct (Index A) is defined as an idea or ideas that fit together. For example, **Matter** is a construct that is found in Index A under Science. After determining the construct (Index A), review the concepts identified in Index B and decide whether the construct is further defined by one or more of the concepts in Index B.

4. *Code competencies and objectives at the greatest level of detail.* In the Mathematics skill area of the Verb Index (page 23), Code 179 indicates **Measures - Direct**, meaning that the measurement is direct rather than by formulas, for example. Index B should be examined, though, to determine whether any of the concepts further define the construct (Index A). Generally, the instructional objective will include information that provides clues for this coding. Since it is essential that the objective or competency be rated at its greatest level of detail, the concepts presented in Index B must be examined. In the example presented below, the item could be rated as **Measures (Verb Index) - Direct (Index A)**, but knowledge regarding the subject matter indicates that measuring temperature directly would provide a more detailed coding. Therefore, selecting **Measures - Direct - Temperature** from Index B (Code 182) is the appropriate code.

Example: Measures and records the reproduction cycle
of various types of livestock.

Code 182	Measures	Direct	Temperature
----------	----------	--------	-------------

5. *Use the Taxonomy consistently when coding source materials.* Generally, when coding the Mathematics area, it is best to identify the construct (Index A) and then search for the appropriate concept (Index B). When coding in the Language Arts area, it is usually preferable to identify the focus (Index A) and then search for the specification of the focus (Index B). For example, in the item coded 172 (page 41), **Information--Oral** is the focus while the specification of the focus is **Fact/opinion**. When using the five sub-categories of Language Arts (i.e., Speaking, Listening, Writing, Reading, and Language Concepts), often the emphasis is determined by whether the instructional objective is to

send or to receive information. Regardless of the categorization, use the same index throughout the entire academic area being analyzed.

6. *Consult Index B when source materials call primarily for definitions.* Consider, for example, the Free Enterprise area. The majority of documents used to create the Taxonomy treated this academic skill area as identifying or defining ideas. Therefore, the verb does not provide sufficient discrimination for coding. The Verb Index for Free Enterprise indicates that the action, in most cases, is either a definition or an explanation. For example, in the item coded 022 (page 10) the Verb is **Defines** and the construct **Economic Terms** (Index A) covers a broad spectrum, but is detailed by the concept **Entrepreneur** (Index B).

Coding Conventions

Words with similar meanings. **Defines**, **Describes/Explains**, and **Identifies** are included in the Verb Index of several academic skill areas. These words are similar in meaning, but a differentiation can be made by associating an intended outcome with each. The verb **Defines** is used when a brief statement of the meaning(s) of a word or term is implied or stated in the source material. **Describes/Explains** is used when a detailed account or interpretation of an event or idea is implied or stated in the source material. **Identifies** is used when a label or recognition of an event or idea is implied or stated in the source material.

These verbs are used extensively in the Free Enterprise academic skill area because the majority of materials used in creating the Taxonomy in this academic skill area were oriented toward providing definitions. Consequently, coders need to be especially sensitive to the nuances of the definitions and the content and intent of the source materials. In most cases, the coder must differentiate between labeling, explaining, and/or providing a brief statement of meaning.

Adapts is used frequently in the Language Arts academic skill area (page 13) to describe a speaker or a listener tailoring his or her communication to the needs of another person or group. **Adapts** is also used to refer to adjusting one's strategy while speaking or reading.

Style and Diction and Structure, as used in the Taxonomy, differentiate between a manner of communicating and a choice of words and their relationship to each other. **Style** is an individual manner of communicating, whereas **Diction and Structure** refer to the correct usage and organization of words.

Verbs with special meaning. **Attends** means heeding or paying attention to instructions, directions, and verbal and nonverbal cues. This verb and its special meaning are rooted in the communications literature.

Appreciates is used to connote valuing or admiring. In the Taxonomy, it is used to indicate an appreciation of a literary approach or style.

Evaluates is used to connote a judgment of the worth or significance of a presentation or communication. **Evaluates** is also included in the academic skill area of Mathematics as part of **Calculates/Evaluates** and in the academic skill area of Science as part of **Analyzes/Evaluates**. When **Evaluates** is combined with another verb, as in the Science or Mathematics area, the term is used to connote a type of judgment (e.g., the adequacy of an algebraic expression or the adequacy of a scientific experiment).

Calculates/Evaluates and **Computes** are used in the academic skill area of Mathematics. **Computes** is used when a precise result is expected such as summing a group of numbers, whereas **Calculates** is used when higher order mathematical operations are required.

Miscellaneous or missing concepts. The Taxonomy obviously cannot include all the concepts in an academic skill area without becoming too unwieldy for use. As stated earlier, Index A contains constructs identified from a variety of skill/competency lists. A person with expertise in a given academic area or a group, such as a state policy group, might identify some concepts judged important to the knowledge area but not included in the Taxonomy. The elipsis symbol (...) is included under Index B. This symbol provides for concepts judged to be important but not included in the Taxonomy. These items are coded using the elipsis (...) in Index B. Concepts not included in the Taxonomy but judged by knowledgeable people to fit logically under a construct can be coded with the item indicated by the elipsis (...) in Index B.

Numeric codes. Numeric codes are useful in computer analyses of codings from two or more sets of source materials. The numeric codes are first entered into a database and then sorted. It is convenient and efficient to enter the codes directly into a database when coding source materials. When this approach is used, the Taxonomy database can be programmed to display indexed codes from the Taxonomy. This makes it easy to generate individualized coding reports and to develop a Taxonomy tailored to the approved listing of a given state.

Multiple operations within a skills list. Some instructional objectives and/or skills lists are written in a manner that includes several operations and/or concepts in one item. In these cases, the objective or skill should be subcategorized into parts for more precise coding.

Example: Adds, subtracts, multiplies, and divides fractions

Adds fractions
Subtracts fractions
Multiplies fractions
Divides fractions

This item should be divided into four separate items before coding. If the item is coded as a whole, the skill area is distorted, and accurate comparisons are not possible.

Coding Exercises

Taxonomy Organization

1. What are the four academic skill areas included in the Taxonomy?

_____	_____
_____	_____

2. How is the Taxonomy organized?

3. What is the difference between Index A and Index B?

Coding Rules: Part One

1. A Clothing/Apparel course syllabus might be coded in which academic area(s)?

Rationale: _____

2. A Horticulture course syllabus might be coded in which academic area(s)?

Rationale:

3. A Marketing course syllabus might be coded in which academic area(s)?

Rationale:

Coding Rules: Part Two

In the following instructional objectives/competencies, identify the construct from the Taxonomy. Remember to use Index A.

Free Enterprise:

1. Identifies job opportunities in emerging fields.

Construct:

2. Determines and uses customer needs and buying motives.

Construct:

3. Tells the governmental impact on interest rates.

Construct: _____

Language Arts:

4. Identifies the function of words within sentences.

Construct: _____

5. Describes the differences between language situations.

Construct: _____

6. Makes notes of what to say.

Construct: _____

7. Revises a report.

Construct: _____

Mathematics:

8. Changes decimals to fractions.

Construct: _____

9. Identifies and explains misuses of statistics.

Construct: _____

10. Distinguishes between inductive and deductive reasoning and explains how each is used most appropriately.

Construct: _____

Science:

11. Calculates the number of atoms in a particular molecule.

Construct: _____

12. Defines matter.

Construct: _____

13. Lists the major forms of bacteria.

Construct: _____

In the following instructional objectives/competencies, identify the most appropriate concept from the Taxonomy. Remember to use Index B.

Free Enterprise:

1. Defines and analyzes the concept of labor.

Concept: _____

2. Defines and analyzes the micro-economic concept of the exchange rate.

Concept: _____

3. Describes liability.

Concept: _____

4. Compares communism and socialism.

Concept: _____

Language Arts:

5. Participates in a discussion.

Concept: _____

6. Reads and demonstrates comprehension of a summary.

Concept: _____

7. Describes some theories of language origin and development.

Concept: _____

8. Effectively researches an idea/topic.

Concept: _____

Mathematics:

9. Understands and applies basic geometric relationship—parallel.

Concept: _____

10. Applies the Pythagorean theorem in solving problems.

Concept: _____

11. Identifies valid and invalid arguments.

Concept: _____

Science:

12. Describes photosynthesis.

Concept: _____

13. Distinguishes between a solute and a solvent.

Concept: _____

14. Defines static electricity.

Concept: _____

15. Describes the structure of the earth.

Concept: _____

In the following instructional objectives/competencies, identify the most appropriate code from the Taxonomy. Remember that objectives/competencies are to be coded in the greatest detail possible.

Free Enterprise:

1. Explains the various market structures.

Code(s): _____

2. Identifies types of insurance.

Code(s): _____

3. Defines the micro-economic concept of international trade.

Code(s): _____

4. Compares and contrasts the impact of foreign trade on the U.S. consumer.

Code(s): _____

Language Arts:

5. Uses a library.

Code(s): _____

6. Identifies euphemisms and describes how they affect perceptions.

Code(s): _____

7. Takes notes from a lecture.

Code(s): _____

Mathematics:

8. Identifies geometric elements—lines.

Code(s): _____

9. Computes equations and inequalities.

Code(s): _____

10. Makes unit conversions with appropriate levels of accuracy between and within standard systems of measures.

Code(s): _____

Science:

11. Discusses the characteristics of currents.

Code(s): _____

12. Defines friction, force, gravity, speed, acceleration, mass, and weight.

Code(s): _____

13. Describes whether a substance is an acid, a base, or neutral.

Code(s): _____

14. Describes several ways electricity can be generated.

Code(s): _____

In the following instructional objectives/competencies, identify the most appropriate code(s) from the Taxonomy. Remember that certain conventions are to be considered in the coding. Use the coding conventions introduced in the Coder's Guide.

Free Enterprise:

1. Describes the nature of international trade.

Code(s): _____

2. Identifies the types of insurance needed by a business.

Code(s): _____

3. Identifies job openings for an applicant.

Code(s): _____

4. Defines the term *marketing*.

Code(s): _____

Language Arts:

5. Uses telephone directories.

Code(s): _____

6. Reads information from an operations manual.

Code(s): _____

7. Scans written material to obtain information.

Code(s): _____

8. Presents the operation of computer software to a group.

Code(s): _____

9. Uses atlases/maps.

Code(s): _____

Mathematics:

10. Drains water from plumbing into container.

Code(s): _____

11. Sets temperature and pressure safety valve on water heater.

Code(s): _____

12. Mixes concrete in mortar box.

Code(s): _____

Science:

13. Describes principles of plant growth and development.

Code(s): _____

14. Identifies federal, state, and local regulations governing the issue and disposal of chemicals.

Code(s): _____

15. Describes the relationship of noise and acoustics.

Code(s): _____

16. Identifies organic compounds and their reactions.

Code(s): _____

17. Wires automatic timer to control valves.

Code(s): _____

18. Adjusts sprinkler spray patterns for proper coverage.

Code(s): _____

Answers to Coding Exercises

Taxonomy Organization

1. What are the four academic skill areas included in the Taxonomy?

Free Enterprise
Language Arts

Mathematics
Science

2. How is the Taxonomy organized?

* List 1	Verb	Index A	Index B
* List 2	Index A	Index B	Verb
* List 3	Index B	Index A	Verb

3. What is the difference between Index A and Index B?

Index A is a compilation of *constructs* and Index B is a compilation of *concepts*.

Coding Rules: Part One

1. A Clothing/Apparel course syllabus might be coded in which academic area(s)?

Mathematics

Rationale: In a Clothing/Apparel course, students typically must measure, add and subtract or solve problems; therefore, a likely choice would be Mathematics. Mathematics appears to be the most used basic skill that a Clothing/Apparel course requires. Free Enterprise could also be chosen if the skill emphasized the marketing of clothing rather than the designing, sewing, and production of garments.

2. A Horticulture course syllabus might be coded in which academic area(s)?

Mathematics or Science

Rationale: Horticulture competencies often require both mathematical skills and scientific knowledge.

3. A Marketing course syllabus might be coded in which academic area(s)?

Free Enterprise, Mathematics, and/or Language Arts

Rationale: Free Enterprise and Mathematics appear to be related more or less directly to Marketing, but Marketing also requires skills in communication, and, therefore, Language Arts could also be selected.

Coding Rules: Part Two

In the following instructional objectives/competencies, identify the construct from the Taxonomy. Remember to use Index A.

Free Enterprise:

1. Identifies job opportunities in emerging fields.

Construct: Job opportunities

2. Determines and uses customer needs and buying motives.

Construct: Needs/wants

3. Tells the governmental impact on interest rates.

Construct: Government impact/costs

Language Arts:

4. Identifies the function of words within sentences.

Construct: Function of words

5. Describes the differences between language situations.

Construct: Language situations

6. Makes notes of what to say.

Construct: Notes

7. Revises a report.

Construct: Drafts—oral/written

Mathematics:

8. Changes decimals to fractions.

Construct: Decimals/fractions/ratios/percents

9. Identifies and explains misuses of statistics.

Construct: Statistics

10. Distinguishes between inductive and deductive reasoning and explains how each is most appropriately used.

Construct: Deductive/inductive reasoning

Science:

11. Calculates the number of atoms in a particular molecule.

Construct: Atoms, Molecules

Note: Two constructs are important in this instructional objective: atoms and molecules. Number is, in fact, a concept within the construct of atom, and therefore is not identified as a construct.

12. Defines matter.

Construct: Matter

13. Lists the major forms of bacteria.

Construct: Bacteria

In the following instructional objectives/competencies, identify the most appropriate concept from the Taxonomy. Remember to use Index B.

Free Enterprise:

1. Defines and analyzes the concept of labor.

Concept: Labor

2. Defines and analyzes the micro-economic concept of the exchange rate.

Concept: Exchange rate

3. Describes liability.

Concept: Liability

4. Compares communism and socialism.

Concept: Communism/socialism

Note: Free Enterprise is essentially a set of definitional objectives—the concepts are grouped under a broad construct. Consequently, examining Index B is the preferred method for identifying codes in this domain.

Language Arts:

5. Participates in a discussion.

Concept: Discussion

6. Reads and demonstrates comprehension of a summary.

Concept: Summaries

7. Describes some theories of language origin and development.

Concept: Origin/development

8. Effectively researches an idea/topic.

Concept: Research—formal

Mathematics:

9. Understands and applies basic geometric relationship—parallel.

Concept: Parallel/perpendicular

10. Applies the Pythagorean theorem in solving problems.

Concept: Pythagorean theorem

11. Identifies valid and invalid arguments.

Concept: Valid/invalid, Invalid arguments

Science:

12. Describes photosynthesis.

Concept: Photosynthesis

13. Distinguishes between a solute and a solvent.

Concept: Solute, Solvent

14. Defines static electricity.

Concept: Static

15. Describes the structure of the earth.

Concept: Composition/structure

In the following instructional objectives/competencies, identify the most appropriate code from the Taxonomy. Remember that objectives/competencies are to be coded in the greatest detail possible.

Free Enterprise:

1. Explains the various market structures.

Code: 001	Compares	Economic systems	Communism/socialism
002			Free Enterprise/mixed

2. Identifies types of insurance.

Code: 099	Describes/ Explains	Insurance types	...
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3. Defines the micro-economic concept of international trade.

Code: 057	Defines	Economic terms	Trade— international
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4. Compares and contrasts the impact of foreign trade on the U.S. consumer.

Code: 085	Describes/ Explains	Foreign trade	Consumer/ worker impact
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Language Arts:

5. Uses a library.

Code: 272	Uses	Library resources	...
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Note: If only this statement is available, then only this code should be assigned. If a teacher is consulted, the following codes become potential items.

273	Uses	Library resources	Almanacs/yearbooks
274			Atlases
275			Card catalogs
276			Encyclopedia
277			Guides

6. Identifies euphemisms and describes how they affect perceptions.

Code: 204	Identifies	Informal—oral	Euphemisms
162	Describes/ Explains	Perceptual effects	Euphemisms

Note: The instructional objective has two parts to it, each having a different verb. Coding should be done for both verbs.

7. Takes notes from a lecture.

Code: 042	Collects/ Organizes	Information— oral/written	Notes
069	Composes/ Edits	Notes	...

Mathematics:

8. Identifies geometric elements—lines.

Code: 167	Identifies	Lines	...
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9. Computes equations and inequalities.

Code: 049	Computes	Equations	...
059		Inequalities	...

10. Makes unit conversions with appropriate levels of accuracy between and within standard systems of measures.

Code: 126	Converts	Units	Metric/English— meters/feet, e.g.
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Science:

11. Discusses the characteristics of currents.

Code: 357	Describes/ Explains	Oceans	...
358			Circulation
359			Currents

12. Defines friction, force, gravity, speed, acceleration, mass, and weight.

Code: 248	Describes/ Explains	Force	...
252			Gravity
254			Mass
256			Weight

13. Describes whether a substance is an acid, a base, or neutral.

Code: 054	Describes/ Explains	Acids/bases	Acid indicators
055			Base indicators
057			Neutralization/ salts

14. Describes several ways electricity can be generated.

Code: 191	Describes/ Explains	Electricity— generating	...
192			Hydroelectric
195			Solar
196			Steam, e.g., nuclear

In the following instructional objectives/competencies, identify the most appropriate code(s) from the Taxonomy. Remember certain conventions are to be considered in the coding. Use the coding conventions introduced in the Coder's Guide.

Free Enterprise:

1. Describes the nature of international trade.

Code: 057	Defines	Economic terms	Trade— international
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2. Identifies the types of insurance needed by a business.

Code: 099	Describes/ Explains	Insurance types	...
102			Purposes

3. Identifies job openings for an applicant.

Code: 127	Identifies	Job opportunities	Emerging fields
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4. Defines the term *marketing*.

Code: 037	Defines	Economic terms	Market
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Language Arts:

5. Uses telephone directories.

Code: 272	Uses	Library resources	...
277			Guides

6. Reads information from an operations manual.

Code: 132	Comprehends	Information—written	...
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7. Scans written material to obtain information.

Code: 020	Applies/Uses	Study habits/methods	...
132	Comprehends	Information—written	...

8. Presents the operation of computer software to a group.

Code: 261	Presents	Formal speech	...
264		Informal speech	...

9. Uses atlases/maps.

Code: 274	Uses	Library resources	Atlases
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Mathematics:

10. Drains water from plumbing into container.

Code: 009	Calculates/ Evaluates	Geometric figures	Volume
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11. Sets temperature and pressure safety valve on water heater.

Code: 174	Interprets	Charts/tables/graphs	...
179	Measures	Direct	...

12. Mixes concrete in mortar box.

Code: 230	Solves Problems	Proportion	...
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Science

13. Describes principles of plant growth and development.

Code: 378	Describes/ Explains	Plants	...
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14. Identifies federal, state, and local regulations governing the issue and disposal of chemicals.

Code: 007	Analyzes/ Evaluates	Environmental issues	...
011			Pollution

15. Describes the relationship of noise and acoustics.

Code: 406	Describes/ Explains	Sound	Noise/acoustics
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16. Identifies organic compounds and their reactions.

Code: 452	Identifies	Compounds—organic	...
455			Chemical reactions

17. Wires automatic timer to control valves.

Code: 177	Describes/ Explains	Electricity	...
496	Measures	Time	...

18. Adjusts sprinkler spray patterns for proper coverage.

Code: 489	Measures	Distance/length	...
494		Pressure	...